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ABDOMINAL PAIN IN CHILDREN*

BY

A. RENDLE SHORT, M.D., B.S., B.Sc., F.R.C.S.

PROFESSOR OF SURGERY IN THE UNIVERSITY OF BRISTOL

Probably most of us were brought up on the theory, which was universally held in our young days, that abdominal pain in children, and especially in boys, was always due to greediness. To mention such a pain was sure to provoke the retort "What have you been eating?" and grown-ups would talk about green apples and unripe plums—most unjustly, we used to think. The remedy was likely to be something in the nature of castor oil, and many a boy regarded coffee with suspicion for years, because it had so often been the vehicle for the unpalatable dose. As a matter of fact, the great majority of abdominal pains in children are not due to some single indiscretion in diet at all, and the routine use of an aperient in such cases kills hundreds of children every year in this country. Nothing is more calculated to convert a mild appendicitis into a fatal one than the administration of purgatives.

For the purpose of diagnosis one may conveniently divide the cases into two groups: those with and those without diarrhoea, and, again, those under and those over the age of 5.

I shall say little about the first group—*cases with diarrhoea*. The great majority are, of course, suffering from some form of irritant poisoning, either chemical or bacterial, and here certainly we must include the few children who have been over-eating, or taking unsuitable articles of diet. In most cases the attack is short-lived, and is all over in a day or two: the doctor is only called in for the severer type of illness. There are, however, some child patients with abdominal pain and diarrhoea whose ailment is more serious, such as tuberculous peritonitis, chronic diarrhoea of children, and pneumococcal peritonitis. In tuberculous peritonitis with diarrhoea there will probably be the wasted child, the swollen, tumid abdomen, and slight, irregular fever. I shall return to pneumococcal peritonitis later.

It remains to consider *cases without diarrhoea*, first in children under 5 years old and then in those over this age.

Abdominal Pain under 5 Years of Age

It is not in my province to say anything about the abdominal pains of infants who take unkindly to bottle feeding, nor shall I recount again the well-known symptoms of congenital stenosis of the pylorus. Under the age of 5 appendicitis, if not an impossible diagnosis, is distinctly uncommon, although it may be that I have the honour, such as it is, of holding the record for operating for appendicitis at the extremes of life—my youngest patient was aged 12 days and my oldest 84 years. Both did well, although it is only fair to confess that the infant had not a normal appendicitis, the appendix lying in a hernial sac, in which, however, it had become acutely inflamed.

INTUSSUSCEPTION

The most important condition to be borne in mind when a child under 5 gets an acute attack of abdominal pain is, of course, intussusception, because twenty-four hours' delay in making a diagnosis means death. If a child has passed undeniable blood and mucus a mistake would scarcely arise, but this symptom may be delayed for many hours, or the mother may give a confused history, and may have thrown away the evidence. Even apart from the passage of blood and mucus a diagnosis can generally be made.

I was called the other day to see a child aged 2. He had been perfectly well until 8.30 a.m., when he awoke screaming with pain in the abdomen. Seeing him with the doctor about 10.30 a.m., one was immediately struck with the attitude of the child; he lay pallid, listless, and quiet, with the imprint of fear upon his face, waiting in terror for the next pain. In a few minutes it came. He drew up his knees, groaned, and cried, and was evidently suffering severely. In about a minute the spasm passed and he became listless again. In this case the attacks of colic were about every twenty minutes, no blood or mucus was passed, and nothing could be felt in the abdomen. One and a half hours later, when he had been moved to a nursing home, the characteristic sausage-shaped tumour had become palpable, and at operation an intussusception was discovered.

One has to bear in mind that in nearly 50 per cent. of cases of intussusception the sausage-shaped tumour is absent (although under an anaesthetic it can nearly always be discovered), and it may be well worth while in cases of doubt to give an anaesthetic and palpate for it. The *signe de Dance*—that is, emptiness of the right iliac fossa—is helpful, but seldom sufficiently conclusive to enable one to diagnose on it. The signs *par excellence* of intussusception, when no blood or mucus has been passed and no tumour can be felt, are the highly suggestive alternations of listlessness and colicky pain, and the finding of blood and mucus on the examining finger per rectum.

COLIC AND OTHER CONDITIONS

It occasionally happens that instead of missing a case of genuine intussusception the practitioner or the surgeon diagnoses it when it is not present, and this may lead to an unnecessary operation. Colic with a free discharge

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of pure mucus, without blood, is not enough, and may be due to colitis ; I have seen some fruitless operating as a result of this mistake. Children are not infrequently referred to the surgeon on suspicion of intussusception who are, as a matter of fact, suffering from acute ileo-colitis. They may have colicky pains and look very ill ; they sometimes pass blood and mucus. Of course there is no sausage-shaped tumour to be felt, but this is not uncommon with genuine intussusception. To guard against mistakes one should note that the child is usually a little older—over 18 months, not under—and the illness usually begins with diarrhoea. The main clue, however, is to remember that ileo-colitis is essentially a diarrhoea, whereas intussusception is essentially an intestinal obstruction. In the former case there is faecal matter on the examining finger per rectum as well as blood and mucus ; in the latter case there is pure blood and mucus.

According to the books Henoch's purpura may mimic intussusception very closely—a very sick child, colic, a lump, and the passage of blood and mucus. I have never seen a case that gave any real difficulty. Purpuric spots on the skin give the clue.

Acute intestinal obstruction may occur in young children from causes other than intussusception, but with the exception of strangulated hernia, and obstruction following operations, it is rare.

Abdominal Pain over 5 Years of Age

After the age of 5 every child with an abdominal pain lasting more than an hour or two, and not accompanied by diarrhoea, is likely to be suspected, however unjustly, of appendicitis. I have had a considerable experience of cases of this type, inasmuch as for the past twenty years successive school doctors have allowed me to see *every* boy, in a large public school, suffering from abdominal pain. The great majority, needless to say, were not appendicitis, and did not need operation.

APPENDICITIS

Let us consider, first, the genuine cases of appendicitis. In most of these there was never any doubt or difficulty in making a diagnosis after about six hours from the onset of the symptoms. Pain as the first symptom, followed by vomiting and rise of temperature, starting in the middle of the abdomen and settling down in the right iliac fossa, with a little tenderness and guarding, assembles an unmistakable picture, though in these early cases one must be prepared to make a diagnosis with only a little tenderness and no guarding. But things are not always so simple.

There was a boy in whom the pain and tenderness were so high up that for a couple of days it was called "duodenitis." (Probably there is no such disease in children of school age.) When at length operation was performed, a high-situated appendix had perforated, and convalescence was somewhat stormy.

More serious is the confusion caused by the pelvic appendix, both in children and in adults. The great majority of missed and fatal cases of appendicitis belong to this category. There is mid-abdominal pain at the onset, and often vomiting ; the pulse and temperature then rise, and the pain shifts lower in the abdomen, but there is no tenderness and no guarding in the right iliac fossa, and the practitioner, relying too much on books and too little on experience, concludes that it cannot be appendicitis. As a matter of fact it often is. If the appendix lies low in the pelvis there will be tenderness per rectum ; more frequently the appendix lies a little higher, hanging over the brim, and this sign fails. There will be a little tenderness, not pronounced, on pressing above the pubes and Poupart's ligament on both sides, and that is all. But in a school child it is quite enough to warrant a most necessary operation. After all, what else can it be besides appendicitis? There are, of course, a number of special signs described for appendicitis—skin tenderness, Rovsing's, Bastedo's, and Zachary Cope's signs, and the unilateral cremasteric reflex—but in my experience they fail us just when we should value them most.

A good many children and young people get a succession of attacks of mid-abdominal pain lasting a few hours, with no rise of pulse or temperature and no signs in the right iliac fossa, which cannot possibly be diagnosed, but which are eventually proved to be appendicitis by the development, months or years later, of a typical acute attack. The inflamed appendix is then removed, and shows a stricture left by former inflammation ; thereafter, the attacks of pain cease to occur. A public school doctor sees a number of cases of this type. It is not suggested, however, that they ought to be operated on without diagnosis.

Before leaving the subject of appendicitis in schools, it may be worth while to add that in a series of about seventy cases there was no mortality, and the only one that caused grave anxiety was a boy who developed a measles rash on the third day, and was hustled into an attack of pneumonia by the anaesthetic. This promptly resolved when the rash came out, but for a day things looked very ugly. The anaesthetist unfortunately got it into his head that the boy had eaten some illicit grapes just before the operation, and must have inhaled a vomited grape-skin into the bronchus. He was unduly depressed in consequence. Under such circumstances the measles rash was a relief!

PNEUMOCOCCAL PERITONITIS

There is one really dangerous disease, almost confined to girls of school age, which is often mistaken for appendicitis—namely, pneumococcal peritonitis. It is not common, but most doctors will see a case or two whilst they are in practice. Sometimes it comes on with, or follows, pneumonia ; the diagnosis is not then difficult. More commonly the acute type of pneumococcal peritonitis is abdominal from the first ; the pain may be right-sided, in the hypochondrium or all over the abdomen, and in some cases it is very severe, more so than in any other acute abdominal condition in children. There is often a little diarrhoea for the first few hours, a very tell-tale symptom. The pulse and temperature rise, and within a day there is, as a rule, rigidity and tenderness all over the abdomen. Vomiting may or may not occur. The patient soon comes to look very ill.

In a typical case the diagnosis can be made with fair certainty ; the early onset of symptoms of general peritonitis without any localization in the right iliac fossa, the early diarrhoea, and the obvious severity of the illness are enough. There may, in addition, be early signs of pneumonia. It is important to recognize the condition, principally in order that a too favourable prognosis may not be given. These children mostly die, and operation is probably worse than useless, except in later cases with a localized abscess. Many of them have been submitted to laparotomy in the past on the supposition that it was a case of appendix peritonitis. [My own practice is to refrain from immediate operation, and to institute the Ochsner-Sherren line of treatment for children with evidence of so-called "general" peritonitis due to a perforated appendix ; it is astonishing how wonderfully the majority of them improve within twenty-four or forty-eight hours. Children with appendicitis not yet perforated, or only recently perforated and localized to the right iliac fossa or pelvis, should be operated on at once.]

Pneumococcal peritonitis is not the same thing, of course, as basal pneumonia simulating appendicitis, a mimicry which occurs both in children and in adults, and can lead to a grievous mistake. If there are frank signs

of pneumonia in the lung the difficulty is not likely to arise, but a child may complain of pain and tenderness in the right abdomen, look ill, and show a rise of pulse and temperature, and muscular rigidity, making up a picture perilously like that of appendicitis. Some point or other will nearly always put us on our guard. The temperature may be too high and the pulse not high enough (a temperature of 102° F. and a pulse of 90 suggests pneumonia; a temperature of 99.5° and a pulse of 100 suggests appendicitis). There may be a short, sharp, suppressed cough, the alae nasi way be working laboriously, and the stethoscope may detect fine hair crepitations at the right base. Most important of all, the respiration rate may be raised unduly—perhaps to 35, or even 40. If in doubt one should wait twenty-four hours, when in all probability the diagnosis will have clarified considerably. It is better to leave an inflamed appendix than to give ether to an early pneumonia.

Influenza sometimes shows a transient mimicry of appendicitis; there may be pain and tenderness in the right lower abdomen, with fever. But the rise of temperature will have preceded the pain, and will be too high in proportion to the abdominal symptoms. An enema generally puts an end to the doubt by relieving the influenza patient of his flatus and of his pain.

INFLAMED MESENTERIC GLANDS

In my experience, however, none of the above conditions often give rise to trouble in the differential diagnosis of acute febrile appendicitis. The real source of difficulty is inflamed mesenteric glands in the angle between the terminal ileum and the ascending colon, usually, but not always, tuberculous. Unless the surgeon is in the habit of using a Battle instead of a McBurney incision, he will greatly underestimate the frequency and importance of this condition. I have found that in 6 per cent. of cases diagnosed as acute appendicitis in school children the condition is, in fact, that of mesenteric lymphadenitis.

The pain, rise of pulse and temperature, and tenderness in the right iliac fossa are just the same, and sometimes a differential diagnosis is impossible. The gland cases do not usually vomit, the pain starts in the lower right abdomen and not at the umbilicus, and the tenderness is rather vague and diffuse; otherwise there is nothing to separate the two diseases. Nor does it much matter, except that it is wise to mention to the parents the possibility of lymphadenitis as well as appendicitis before operation. The proper treatment is to remove the appendix, then look for enlarged glands; if found they should be removed. One has to exercise care to do this, or there may be a good deal of bleeding and some risk to the integrity of the arterial blood supply to the caecum, but if the glands are left pain will recur, and if they are removed it will not.

Tuberculous mesenteric glands may, of course, be found in other parts of the abdomen besides the right iliac fossa, and may give rise to attacks of pain, fever, and tenderness. There is not much to be gained by operating under these circumstances, as the glands are likely to be too widespread for removal.

So far we have been considering the acute case with pain and fever. As everyone knows, both appendicitis and mesenteric lymphadenitis may give rise to pain and tenderness in the right iliac fossa without any fever. If the pain is severe and colicky, with vomiting, the case is probably one of obstructed appendix, and operation ought not to be delayed; if the symptoms are mild, with a steady, dull ache, no vomiting, and no rise either of pulse or temperature, it is safe to wait for a few days if the child is under close observation. If there have been previous attacks, however, it is better to remove the appendix to prevent a succession of recurrences.

ABDOMINAL TUBERCULOSIS, SPINAL DISEASE, MUSCULAR STRAIN

There remain a considerable number of cases in children in which the appendix cannot reasonably be suspected. There is no dietetic indiscretion, and no vomiting, diarrhoea, or abnormal constipation, though they complain of very persistent or recurrent pain. If the pain is present all day and every day it may be due to tuberculous peritonitis, tuberculous spine, or muscular strain of the abdominal wall. Tuberculous peritonitis in children can usually be recognized by one or other of the following aphorisms:

Chronic causeless ascites in a child = tuberculous peritonitis—ascitic type.

Strange lumps in a child's belly = tuberculous peritonitis—adhesive type.

A wasted child with a swollen, doughy abdomen = tuberculous peritonitis—ulcerative type.

It is very humiliating for a doctor to have under his care a patient with a perpetual pain round the abdomen, and after blaming in succession the appendix, the stomach, and the gall-bladder, eventually to be shown by someone else that there is an angular curvature of the spine which he had never looked for.

Chronic muscular strain of the abdominal muscles may be puzzling. The patient may think that his stomach or appendix is at fault, but the pain depends more on movements and posture than on taking food; there is no nausea, and there may be tenderness on pressure when, on being asked to sit up in bed, his muscles are contracted, as well as when they are relaxed. If it had been appendicular tenderness the tense muscles would have protected against it.

"MY PAIN"

There remains to be discussed the case of the child who complains of a recurrent pain, lasting a few minutes as a rule (though it may be longer), and mostly mid-abdominal; it comes on without any obvious cause, and a physical examination of the patient gives entirely negative results. It may recur over many months or years, and becomes so familiar that the child and the family refer to it as "my pain." Many, if not all, of these children are afflicted with mesenteric lymphadenitis, usually tuberculous, which is a very common finding at necropsies.

One used to be at a loss to understand how such enlarged glands, even if caseous or calcareous, could cause such a sudden, brief, occasional pain. This problem was solved when my friend Dr. Kiss, now professor of anatomy at Budapest, showed that the splanchnic nerve fibres of the mesentery actually traverse the lymphatic glands. A wave of peristalsis, which would be painless in itself, pulls upon the subjacent mesentery, and the inflamed or calcareous gland between its leaves irritates the nerve fibres passing through or close by; when the wave passes the pain ceases. Sometimes these children have signs of tuberculosis elsewhere, as in the glands of the neck. Occasionally a skiagram shows calcareous glands in the abdomen.

The condition is difficult to treat. If the pains are frequent, rest in bed in fresh air, and regular dosing with belladonna, generally relieves. If there are days or weeks between the spasms it is scarcely worth doing anything. In the course of a few years the children seem to grow out of it. Operation might be considered, but one is apt to find the glands too numerous to be removed.

Enough has been said, I trust, to demonstrate that we have now got beyond the stage of accusing every boy or girl with a pain of having eaten something wrong, and that we no longer give aperients till we know for certain what we are dealing with.

THE CORTICAL MASTOID OPERATION

AN ANALYSIS OF NINETY-ONE CASES

BY

ROY SALKELD, B.A., B.M., B.CH.OXF., F.R.C.S.ED.

FIRST ASSISTANT TO OUT-PATIENTS, LATE HOUSE-SURGEON, CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL

The following comprises an analysis of ninety-one cortical mastoid operations performed consecutively by me while acting as ear, nose, and throat surgeon at Selly Oak Hospital, Birmingham. The operations and after-treatment were carried out in the main according to the generally accepted methods. There are, however, many minor variations in the procedure adopted by aural surgeons, as regards both the actual operation and the after-treatment. A few of such different methods have been tried in these cases, and the conclusions reached are given.

Material

The cases were chiefly of the very acute type, with general tenderness, and frequently oedema, over the mastoid process. Ten of them had subperiosteal abscesses. Many were toxaemic on admission, the children being often ill nourished and suffering from lack of fresh air and sunlight. The period between the onset of aural symptoms and admission is given in the table below.

Duration of Symptoms before Admission	No. of Cases
2–8 days	73
2–8 weeks	16
12 weeks	1
20 weeks	1

There is a very noticeable gap between the "2–8 days" and "2–8 weeks" groups, which may have some bacteriological significance. Possibly the first group of seventy-three were cases of primary tympano-mastoiditis, while the remainder were cases of tympano-antritis in which the mastoid gradually became involved. In twenty-three the ear infection was a complication of some general condition, as indicated below.

Condition	No. of Cases
Cough or cold	7
"General upset"	3
Scarlet fever	2
Measles	2
Bronchopneumonia	2
Whooping-cough	1
Whooping-cough and pneumonia	1
Whooping-cough and measles	1
Influenza	1
Acute bronchitis	1
Acute tonsillitis	1
German measles	1

One case was the sequel of tonsillectomy and three were reopenings of old mastoid operations. In five the operation was bilateral, and undertaken on infants under 1 year of age with purulent otitis media, which had failed to clear up after myringotomy. Four of these were suffering from gastro-enteritis with vomiting and loss of weight, and one from malnutrition.

The ages of the patients ranged from 9 months to 56 years, as shown in the following table.

Age	No. of Cases
Under 2 years	20
2–5 ,,	28
5–10 ,,	20
10–20 ,,	7
20–30 ,,	6
30–40 ,,	3
40–50 ,,	4
50–60 ,,	3

Operation

Except where intracranial complications were suspected, most patients diagnosed on admission as having acute mastoiditis were given a minimum of one night in hospital before operation. Suspicious cases of otitis media were watched in hospital. If a positive diagnosis was made, one tried to operate at the right, not necessarily the earliest, moment, to find the happy medium between "rushing in" and "cooking."

The operations were performed under gas and oxygen with ether, or ethyl chloride followed by ether; and the anaesthetic was given either through a rubber catheter in the nasopharynx or by means of a Hirsch's airway with anaesthetic tube, so that the anaesthetist was well removed from the field of operation. In all a half-inch bipp strip was placed in the meatus.

The instruments used for the bone work were: a set of straight-backed gouges and a mallet, Volkmann's sharp scoops Nos. 1 and 2, Ballance's double-ended scoop-curette, and a Grant's probe. The bone was removed in three planes, working parallel to the dura mater of the middle fossa, the lateral sinus, and the posterior meatal wall. No overhanging edges were left. An attempt was made to open all the cells, so that a large cavity often resulted. The aditus was well opened up, and in some cases the white prominence of the external semicircular canal could be seen. All granulations were removed from the aditus with the curette, and in a number of instances its patency was tested by attempting to syringe saline through into the meatus.

In certain cases one group of cells was involved to a much greater extent than the others, as the following figures show.

Group of Cells	No. of Cases
Tip cells	18
Zygomatic cells	7
Petrosal angle cells	4
Posterior meatal wall cells	2

In the first group the whole tip was removed. In every case the area posterior to the sinus was explored, and in six infected cells were present. No special point was made of exposing the dura of the middle fossa or the sinus, unless signs or symptoms demanded it, but they were exposed without hesitation to open or remove diseased cells. The sinus was exposed in forty-five and the dura in forty cases. The wound was one-half or three-quarters stitched, according to the size of the cavity. The latter was lightly packed with half-inch bipp ribbon gauze. In complicated cases the wound was left open and packed with hypertonic saline ribbon gauze. In all a half-inch bipp strip was placed in the meatus.

After-treatment

The bipp pack was left in for five days unless undue rise of temperature indicated its removal. After that a flavine and paraffin pack of half-inch ribbon gauze was substituted and changed daily. In the complicated cases the saline pack was changed daily from the first. The meatal bipp was changed daily, and on the sixth day flavine and paraffin substituted; this was continued until the meatus was dry. In packing the cavity on the sixth and subsequent days with the flavine and paraffin ribbon gauze, care was taken to pack the depth of the wound firmly, so as to ensure firm granulations growing in the antrum and aditus. The remainder of the cavity was lightly packed, and several parallel folds of the ribbon gauze were inserted between the skin edges to keep them well apart and to prevent falling in. The wound was not allowed to close until the middle ear had stopped discharging.

Complications

There were four cases of perisinous abscess, two of cerebellar abscess, and one of subdural abscess and thrombosed lateral sinus.

Immediate Results

There were five deaths, all due to meningitis. This was confirmed by post-mortem examination. Two of the patients had previously had meningitic signs, and at operation cerebellar abscesses were found and drained. Both died on the day following operation. The third had a small subdural abscess in the posterior fossa and a fibrous cord in place of the lateral sinus. The abscess was drained, lumbar puncture carried out daily, and the wound re-dressed with hypertonic saline at the same time. The patient lived for three weeks The other two deaths were in children. One, the infant suffering from malnutrition and bilateral otitis media, died four days after operation. The other, a child of 3, developed head retraction and an acute mastoiditis on the other side five days after the first operation. The second mastoid was opened, and lumbar puncture at the time of operation gave a turbid fluid. The child died three weeks after the second operation. One patient developed suppurative panophthalmitis on the same side as the operation, necessitating evisceration of the eye ten days later. The eye was affected on the day following operation. The lateral sinus had been opened because it was covered with granulations and there was a history of rigors ; it bled freely from both ends. Mr. L. P. Jameson-Evans, the ophthalmic surgeon who performed the evisceration, considered that the eye condition was due to embolic spread from the mastoid. There was one instance of facial paralysis ; this was noticed on the day following operation, and was, I think, due to the removal of some deep tip cells. Recovery was complete in four months.

During the healing process in hospital four patients had to have granulations in the wound curetted. After discharge to the out-patient department six had to be readmitted, five with abscesses in the scars, which had to be opened and drained, and one which required removal of necrotic bone. The remaining eighty made an uninterrupted recovery. The average time in hospital was thirty-three days, but the majority were in for about twenty-one days, the longest period being fourteen weeks in a case which obstinately refused to granulate. No patient was transferred to the out-patient department until the meatus was dry and the cavity healing up satisfactorily without much discharge. The average time from operation to final discharge from the out-patient department was ten weeks, five being discharged within three weeks, eight within four weeks, twelve within six weeks. The longest time was twenty-four weeks.

Late Results

A review of the eighty-six surviving cases, approximately six months after operation, was of great interest.

Seventy-seven patients were satisfactory in all respects. The hearing, as tested with the whispered voice, was normal, the middle ear dry, and the wound soundly healed. In eight cases there was still discharge—in seven from the meatus and in one from a sinus in the wound. No local cause could be found for persistence of discharge in the latter case, nor in one of those with meatal discharge. Both were children in poor general condition, and treatment was directed towards improving this. Of the six other patients with meatal discharge, one, the only adult, had a small granulation on the drum, which was being cauterized ; the discharge was rapidly diminishing. The other five had a sticky mucous discharge, and required removal of adenoids.

The four infants suffering from gastro-enteritis were of special interest. After doing myringotomy I was inclined towards conservative treatment, but Dr. D. G. Leys, the physician in charge of these patients, felt that the continued suppuration was the cause of the gastro-enteritis and that the mastoid antra should be drained. This was done, and within ten days improvement was noted in all cases. The vomiting stopped, and they began to put on weight. The operation is a short one, the scar negligible, and the hearing preserved.

Numerical records of hearing are difficult to obtain in a busy out-patient department, but each case was tested with the whispered voice, the other ear being occluded.

In seventy-eight out of eighty-six cases the hearing was normal. Of the remaining eight, seven had meatal discharge. Four of these had poor hearing, and three slight impairment. The eighth was dry, but had a large central perforation following measles. There was practically no hearing by air conduction.

The appearance of the tympanic membrane in the seventy-nine dry cases was, apart from the scars, remarkably normal ; in one, a measles case, as mentioned above, only the margin of the membrane remained. In another there was a small transparent sphere attached to the membrane just above the umbo. I have not seen this appearance before. In four instances the membrane was definitely indrawn.

In four there was some deformity of the external auditory meatus, making it difficult to see the whole membrane clearly. Every effort had been made to avoid trauma to the meatus at the time of operation, so I was disappointed to find that this had occurred. There was no external otitis in these cases.

In seventeen cases there was moderate depression over the scar behind the ear ; in the remainder none or very slight.

General Remarks

These observations are based on a study of the temperature charts and notes of the cases.

1. *Temperature.*—It was noted that in those patients in whom the temperature was high at the time of operation it often remained raised for some five or ten days afterwards. After a short rest in hospital for twenty-four to forty-eight hours or more, the temperature often came down to about 99° F., and if then operated on, most reached normal within a few days.

2. *Operative Technique.*—The importance of opening up the aditus so that the external semicircular canal is exposed, of curetting the aditus, and of syringing saline through the middle ear was well demonstrated Of the eight patients in whom all these things were done seven had no meatal discharge after five days. In the remaining cases the meatal discharge ceased after an average of eleven days.

3. *Drainage.*—It is important to ensure that there are firm granulations in the antrum and aditus in order to shut off the operation area from the middle ear ; thus abscess formation in that area is avoided should the patient have another middle-ear infection. For the first five days after operation the middle ear drains through the well-opened aditus into the loose bipp pack. Very firm packing of the deepest part of the wound with flavine and paraffin ribbon gauze for at least a week after this ensures that the middle ear is completely shut off from the healing mastoid cavity. Later the packing need be only sufficiently tight to ensure that the cavity fills up with firm granulation tissue, and that there are no small residual collections of pus. Tube drainage, I think, is not a good method, because it may produce a cavity, filled with loose granulations, which may easily become reinfected from the middle ear, or in which pus may

remain pocketed after the wound has healed superficially. These remarks apply particularly to cases treated in large institutions where the operator cannot do his own dressings. It is not denied that most patients do well on almost any type of post-operative treatment provided the operation has been efficiently performed ; now and again, however, one does see abscesses in the wounds of well-performed mastoidectomies, and I believe it is due to a failure in post-operative treatment.

4. *Incision.*—Two types of incision were used. The one which gives the best exposure of the mastoid process is one which I learned from Mr. Gill-Carey, surgeon to the Central London Throat, Nose and Ear Hospital and used on about one-half of these cases. It is a semi-circular incision from just above the upper attachment of the pinna to the tip of the mastoid, extending backwards to the hair line. This incision goes through skin and subcutaneous tissues only. After these have been reflected forward, the periosteum is incised by a vertical cut at the anterior end of the wound ; after a backward incision at the upper and lower ends of this cut the periosteal flap is reflected posteriorly. Besides giving a good exposure this incision does away with the necessity for a horizontal posterior incision when dealing with post-sinus cells. Its disadvantages are that the retractor does not always hold very firmly in the wound, and that, should it prove necessary to leave the wound open, the flap falls in and secondary suture becomes essential. On the other half of these cases the more usual incision down to the bone was used. It had the same limits above and below as the first, but extended posteriorly only about half an inch behind the attachment of the pinna. A horizontal back cut was often necessary to explore the post-sinus cells. The first incision is to be preferred for the exposure it gives and for cosmetic reasons, except where the wound has to be left open.

5. *Sutures.*—Various sutures and suture materials for the skin were tried. The double stitch, going deep and returning superficially, although everting the edges well, tends to cause scarring later. The simple stitch with horse-hair gave the best cosmetic results.

6. *Post-auricular Depression.*—The presence or absence of a depression behind the ear after operation is not dependent on the size of the cavity, the site of the incision, or upon whether the periosteal edges are approximated or not ; probably it depends on some inherent property of the tissues concerned.

7. *General versus Special Wards.*—Owing to the great number of mastoid cases admitted to the hospital in the spring of 1934, a number of the above patients were nursed in the general wards. These had a more uninterrupted recovery and healed more quickly than those in the ear, nose, and throat wards. This was, I think, due to the absence of cross-infection. I did not hear that the general cases gained any corresponding benefit from the intrusion.

Summary

In the above series of ninety-one consecutive cortical mastoidectomies, comprising patients of all ages, eighty made an uninterrupted recovery. Six patients were re-admitted for further operation, and five died in hospital.

The majority were in hospital for three weeks ; the average time from operation to final dismissal was ten weeks.

A review of the eighty-six surviving cases after six months showed that seventy-seven patients had dry ears, soundly healed wounds, and normal hearing. In eight the hearing was impaired, and in a similar number there was persistent discharge.

In the operative technique, adequate opening up, careful curettage, and lavage of the aditus is important.

In the post-operative treatment, after the first five days, firm packing of the depth of the wound for about a week shuts off the middle ear from the operation area, and prevents reinfection of the latter.

My thanks are due to Mr. E. C. N. Strong, my successor, for the skill and attention he devoted to many of these cases during the healing stages ; to the medical superintendent, Mr. R. P. S. Kelman, and to members of the lay and nursing staff of Selly Oak Hospital for their kind co-operation in the collecting of the above statistics ; and to Mr. J. D. McLaggan, surgeon and dean of the Medical School, Central London Throat, Nose and Ear Hospital, for his valuable help and criticism in connexion with this paper.

Bournemouth.

BACILLARY DYSENTERY: A SUMMARY OF TREATMENT

WITH BRIEF STATISTICS OF AN EPIDEMIC

BY

H. W. CORNER, M.D.

ROYAL AIR FORCE MEDICAL SERVICE

In the treatment of an acute epidemic disease, more particularly when specific measures are available, there should be no delay at the start. Hesitation means handicap, whether from uncertainty in diagnosis or from misjudgement of the severity of infection. Throughout the course of treatment practice should conform to theory, not to hypothesis, speculation, or experiment.

Theoretical Considerations

The toxaemia, and the orderly sequence in clinical events following infection, serve to distinguish bacillary dysentery from the many miscellaneous causes of this unpleasant symptom. When an exotoxin is present, as with the Shiga bacillus, the effect appears early and is severe. The amoebic disease has none of these general features. Amoebic dysentery is a non-vector protozoal disease. It may acquire high endemicity, but cannot become epidemic. The morbid process differs, and the course of disease is necessarily distinct.

The degree of severity in bacillary dysentery is the basis of clinical classification, the disease being either (1) mild, (2) severe, or (3) fulminating (choleraic): serum treatment is indicated in all except the mild cases. Clinical judgement depends on a recognition of underlying mechanisms. For example, in the Shiga infection there is early histotoxic anoxaemia, often manifest in the patient as a peculiar bluish flush, and giving way sooner or later to pallor. There is loss of tone in capillary and vasomotor areas, and a resulting fall in blood pressure. The signs denoting severity are those of imminent collapse, and are in terms of the circulatory system ; they are not of the arresting nature of tenesmus or of strangury, and need not occur in proportion to the degree of fever or the frequency of stool. Bacillary dysentery is more than "an abdominal disease." It is for this reason that many cases which begin mildly become later severe or fatal.

Early exhaustion, which is due to toxaemia, is amenable to treatment, and certain drugs are of some value. Late exhaustion results from tissue depletion. It is less amenable to treatment, and all drugs are useless. It should not, however, be considered an inevitable and vague state of dissolution. To toxaemia is added deprivation and loss of most of the papulum out of which biochemical balance is effected. The mechanism of the syncope is that of peripheral circulatory failure. The principles of treatment are therefore as follows: improvement of tissue nutrition ; increase of blood volume in

terms of venous return ; conservation of body fluids and of body heat ; and conservation of energy, especially in the posture and effort of defaecation, or in the distress of incontinence.

Necrosis or ulceration of the colon is a lesion entailing certain difficulties in treatment. The necrosis is superficial, but cellular reaction in the underlying layers may be severe. In the peritoneum this reaction is usually negligible, but occasionally may be severe enough to cause death. There is general thickening of the bowel—often from caecum to rectum—into the semblance of a tube of chewed leather, lined by dark green blood-and-bile-stained shaggy coagulum. This is a lesion for which it is useless to continue pouring down salines by mouth. The position should be considered. The bowel, upper and lower, has been emptied by an initial purge, serum has been administered, and toxaemia is therefore no longer a danger. The patient's diet has for several days consisted of fluids. The over-persistent use of salines will now cause elimination or excretion of nothing but valuable nutritive fluid, will aggravate hypotension, and will precipitate collapse. Even the injunction "salines four-hourly till the stools become faeculent" may be dangerous advice.

It would be unwise, moreover, to attempt per-rectal irrigation of the ulcerated area with antiseptic solutions of a strength whereby absorption would be toxic, or of a nature whereby too astringent an effect would be equally undesirable. Local administration of such solution can produce harm more readily than good. The sole purpose of irrigation should be the removal of irritation from debris accumulated within the lumen of the bowel or on the surface of the lesion.

Treatment in Practice

The ol. ric. cum opio purge is a sound preliminary, but is unsuitable for patients who, when first seen, have already spent two or more miserable days of diarrhoea. It is of special benefit when there is more early colic than early diarrhoea. It is too valuable to be omitted just because the laboratory requires specimens without oil: specimens can always be had before the oil is given.

USE OF SERUM

Given early, serum is the most effective single therapeutic measure in this disease. It should be given promptly in every severe case of epidemic dysentery without waiting for bacteriological reports on cultures. Specimens are plentiful. Macroscopic and microscopical examination of faeces should be done as part of the "condition on admission." There is sufficient evidence at hand for immediate decision. Exactitude of dosage and route of administration matter less than that the serum should be given promptly. The initial dose should be 40 to 80 c.cm., repeated if necessary on the following day. The intramuscular route is the method of preference.

It is well to remember that bacillary dysentery is a disease "at first worse than it seems and later as bad as it looks." There is a type of patient who suffers quietly and uncomplainingly for a few days, and subsequently becomes alarmingly collapsed during a period of relaxed observation. Pallor, frequent and small-volume pulse, and systolic blood pressure under 90 mm. Hg are then discovered for the first time. It is the management of this type of case that often decides whether the mortality figure for an epidemic is to be high or low. It might be said that the very worst cases succumb in spite of treatment ; the very mild cases recover irrespective of treatment ; the cases initially severe receive prompt treatment and so recover ; but the cases beginning in a mild way and later becoming severe miss the benefit of early serum and so tend to run a more precarious course.

Concerning the customary guides to severity—namely, fever and frequency of defaecation—three things should be kept in mind. (*a*) That the time of examination may happen to be at any point in the rapid sequence of fever (subnormal → continued → remittent → irregular → normal), or in a similar and roughly corresponding sequence in the stools (diarrhoeal → mucosanguineous → "ulcerative type" → sanguino-faeculent → semi-formed). (*b*) Although the above order is usual in Shiga infection there may be any variation. (*c*) In the worst type of case the patient has neither fever nor time for defaecation.

The serum is antibacterial as well as antitoxic. It is perhaps for this reason, or because of the benefit accruing from the globulins, that serum given late in the disease, though less effective than when given early, nevertheless produces undoubted improvement. Such use, however, implies a failure in early diagnosis or a failure in the estimation of degree of severity.

Bacteriophage has much in the nature of its inception to justify great expectations in dysentery. Nevertheless its failure is such that its use in treatment may amount to dangerous experiment. It proscribes the use of serum, and suspends other treatment with no appreciable benefit and with the risk that such omission entails. With its *in vitro* success and its *in vivo* failure this substance would appear to have been introduced prematurely into therapeutics.

SALINES AND DIET

Sodium sulphate in mixture (℥ j to fl. ℥ j) is stock treatment, but the routine scheme should be varied for the individual. When an initial purge has been given, one ounce of the mixture should be administered two-hourly for one day, four-hourly for the next two or three days, and then dropped, as soon as possible, to a single early morning dose. When no initial purge is given, hourly doses for eight hours can be used during the first day, two-hourly the second day, four-hourly on the day following, and can be suitably tapered off. There can be no fixed rule ; pulse, blood pressure, nature of stool—all have to be considered.

Diet is all-important. The dictum "fluids and plenty of them" refers not to the diet itself but to the simple flavoured drink which should be present in a jug by the bedside and duly replenished. Milk should never be given, either fresh, diluted, or disguised, for it induces colic and an aggravation of abdominal symptoms. Occasional ice-cream has no contraindication. Chicken tea, arrowroot, beef-tea, and Brand's essence are mentioned in the order in which they appear to be of value, and, incidentally, in the patient's order of preference. The laxative effect of meat extracts is to be remembered. Rigorous mouth hygiene is important, and chewing gum is both useful and comforting.

This two-hourly dietary, varied suitably but not overstepped, serves to tide the patient over his initial toxaemia, but it should not be prolonged unnecessarily. There should be a gradual increase to custard ; tea, with an egg and thin bread-and-butter ; steamed fish ; minced chicken ; milk puddings (except rice) ; and mashed potato. There will be intolerance of certain foods or temporary discomfort following others, but these are not signs for a return to fluids. Likewise it is well to note, but not to be alarmed at, some traces of blood reappearing in the stools.

The diet in late marasmus requires separate consideration. Here the emaciation is extreme. The body weight of an adult male may drop under 4 stone. The patient's appearance may suggest a skeleton or a shadow, and is a spectacle of the horror of disease. There is fretful childishness as well as pitiful enfeeblement. This is a

condition requiring light but highly nutritious diet of a wide range, with vitamin preparations given with a definite purpose in view and not haphazard. A nursing staff with infinite patience and a tactful cajolery is as necessary as a suitable diet. A remarkable feature of this condition is the degree of emaciation and the duration of this precarious vegetative state that is compatible with complete recovery.

RELIEF OF PAIN

This is a necessity in every case. In the treatment of this disease there is no place for morphine. Opium itself, however, in the form of the tincture, has its limited use at first with the purge, and occasionally later, but before exhaustion sets in. Hypodermic preparations of the total alkaloids of opium do not appear to have all the dangers of morphine alone, and, suitably restricted, are permissible in emergency. The pain of tenesmus may be relieved by hot water rectal irrigation. Anal pain is relieved by atropine in suppository. Prolapse and haemorrhoids, old and recent, are temporarily relieved by local bathing with hot water, thorough drying, and subsequent application of the non-aqueous calamine cream to the skin. The pain of strangury is relieved by belladonna in alkaline mixture in suitably large doses. The general abdominal discomfort is made easier, when practicable, by radiant heat. The pain of iritis will be mentioned later.

INTRAVENOUS MEDICATION

This is called for in every severe case. It is used *early in toxaemia* for serum, when the necessity for the latter would appear too urgent for intramuscular injection, and *early in exhaustion* for 5 per cent. glucose in normal saline. The time-indication for glucose in saline is important. If left too late the therapeutic opportunity is lost. Moreover, venous collapse is not just a matter of badly filled or empty veins. The walls of the vein lose tone, and, even when it is filled, it slips away from the needle like an elusive worm refusing to be pinned down. To cut down and expose such a vein is of no avail when collapse of the walls is present. The ordinary intravenous needle and 35 c.cm. funnel is satisfactory, used with a burette clamp at the bedside to hold the funnel. Not more than 500 c.cm. is run in, and the procedure should not take less than half an hour. Stronger solutions of glucose have no advantage, and increase dehydration. Hypertonic saline solutions produce serious disturbance in an already lowered intracranial tension.

Continuous intravenous saline finds its application of value in the marasmus of dysentery. The method, just described, of injecting 300 to 500 c.cm. in half an hour amounts to a "shock" dose; used at the right time it may serve, or it may have to be repeated. In marasmic patients, however, the continuous method *must* be used. The patient is changed and "made comfortable." The selected arm is splinted and secured. One litre of normal saline (without glucose) is run in at an even rate, and should not take less than ten hours for the total amount. This is immediately followed by one litre of 5 per cent. glucose in normal saline solution, given at the same rate.

Due attention to detail ensures that there is no difficulty. The patient may grow restless and may indicate that the procedure increases his fatigue, but presently he falls into a calm sleep, from which he awakes considerably refreshed and much improved. The exact rate of flow is less important than that the maximum permissible rate be not exceeded.

Hypotension and tachycardia are features for which the treatment can be only indirect. In early exhaustion, however, strychnine-atropine-adrenaline combinations, or coramine, or intravenous strophanthin may induce some general improvement, with temporary disappearance of these signs. Later in the disease all drugs are useless. As a result of inanition, wasting, and feeble, shallow breathing, there is progressive deflation of the lungs and upward displacement of the diaphragm. Necropsies in dysentery show a body cavity that is thus "all abdomen." Receding from view in the insignificant thorax is the shrivelled, blubber-like piece of lower lobe, or whole lung, huddled against the spine. This evidence supplies one of the many reasons for the fact that hypotension and tachycardia disappear only with convalescence.

ENEMATA

Local treatment by enemata is necessary in relief of symptoms and as an aid to repair of the mucosa. This method should be used before sphincter control is lost. The fluid used must be a bland fluid; there must be a gentle but thorough lavage from sigmoid to caecum; there must be a complete removal of all necrotic material —shreds, clots, and sloughs. The most suitable fluid is water. Plain tap water at blood temperature is used as a two-pint irrigation. After irrigation, 20 c.cm. of plain serum in half a pint of water may be run in to be retained. There is immediate soothing of abdominal discomfort and of rectal uneasiness. If carried out during the evening this procedure does much to secure a restful night.

The use of starch and opium seems only to have the added value of suggestion when the patient is told that he is having an opium enema; on the following day, however, he is usually worse. For late ulceration several solutions may be tried, but suitability varies. Tannic acid solutions produce alarming cyanosis from sudden increase of toxic absorption when the ulcerated area proves to be unsuspectedly large. Eusol and rivanol appear to be relatively harmless and not superior in results to tap water. Suspensions of kaolin or charcoal relieve discomfort from accumulation of gas in the colon. Silantox is a useful preparation; its therapeutic claim appears not to have been exaggerated.

SPECIAL SYMPTOMS

Conjunctivitis and arthritis are associated symptomatic features in this disease. They are toxaemic manifestations, the endotoxin being accounted responsible. The incidence does not depend on the severity of the disease. The less frequently used term "dysenteric rheumatism" would seem to be more applicable than "dysenteric arthritis." These conditions may disappear in some cases without treatment, but they require all due care. The conjunctivitis is at first palpebral, spreading to canthi, then suffusing the whole surface. Irrigations are required to clear the sac. Iritis occurs less frequently, but is considerably more troublesome. It comes as an added affliction to a weary patient and brings an agony of pain. Atropine and heat in its special application brings grateful relief, but the cure takes time. In the case of joints, aspiration of a large effusion relieves pain and tension; wrapping up in plain wool, or capsicum wool, is usually all that is required.

Vomiting is most common, and is of less import at the onset than when it occurs late in the disease. It may then be the most serious of symptoms. Black vomiting, sudden abdominal distension, and general collapse are signs indicating immediate use of the Ryle tube. Acute dilatation of the stomach may occur as a fatal complication in dysentery.

Persistent fever means persistent infection, but this statement need not necessarily refer to infection inside the colon. More probably the fever is due to some

complication. There are two instances of this: (1) septico-pyaemia from boils, with septic arthritis of knees and other joints simulating dysenteric rheumatism; and (2) acute spreading peritonitis where signs of colitis continue. In both these instances the supervening local and general signs may be imperceptibly grafted on to those of the existing disease. Recovery is slow. Blood pressure and body weight are useful guides to progress. Convalescence is a stage of relaxed but not relinquished supervision.

The mortality rate in the severe type of bacillary dysentery is between 40 and 60 per cent. By careful and timely application of proved measures, as detailed above, a mortality rate under 10 per cent. has been secured.

Statistics of an Epidemic

The foregoing summary is based on notes and observations made on cases of dysentery arising during four years of service in Iraq. A recent epidemic of *B. shigae* infection in a community (approximately 1,500) of British Forces near Baghdad serves to illustrate several important points. A chart showing the daily case incidence, and a table giving relevant meteorological information, are printed below.

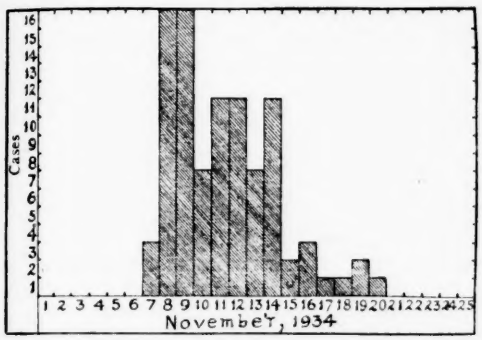

Chart showing daily incidence.

	Date, November, 1934								
	7th	8th	9th	10th	11th	12th	13th	14th	15th
Maximum shade temperature F	78	74	78	80	80	79	80	77	74
Minimum shade temperature F	60	65	53	48	52	49	48	56	48
4-foot earth temperature F	80.8	80.5	80.3	80.2	80.0	79.9	79.6	79.3	79.1
Maximum humidity percentage	57	51	54	54	50	49	57	65	57

In this epidemic there occurred, within two weeks, a total of ninety-two cases, classified as sixty-one mild and thirty-one severe. Such a classification may appear to depend on arbitrary standards of severity, but with a "full view" of the disease, and with some collateral standard of morbidity such as cholera gravis, this grouping of clinical types can be done without bias or over-assessment. The incidence of certain features of this epidemic is shown as follows:

	Cases		Cases
Conjunctivitis	17	Early dysphagia	3
Iritis	1	Exhaustion psychosis	4
Arthritis	6	Multiple boils	4
Stomatitis	1	Acute dilatation of stomach*	1
Parotitis	2	Septico-pyaemia*	1
Severe hiccup	2	Peritonitis*	1
Late vomiting	3		

* Fatal.

Hypotension was an additional feature worthy of special note. In all but eight cases the systolic pressure fell and for weeks remained below 110 mm. Hg, as follows: in thirty-seven cases under 110, in twenty cases under 100, in thirteen cases under 90, and in fourteen cases under 84 mm. Hg. The figures given here are not merely from single readings, but are taken from arterial blood pressures under continuous observation.

Bacteriophage, from several different sources, and including "shigaphage" and "intestinaphage," was used in the treatment of fourteen of the cases. There was no apparent benefit, either in general improvement or in symptomatic relief. The three fatal cases of this series belonged to the group so treated. In contrast to this was the immediate and lasting improvement resulting, in other cases, from the use of serum.

The mortality percentage for this epidemic was 3.25. The causes of death are shown on the above table of complications.

Conclusions

The treatment of bacillary dysentery requires, *first*, an awareness of all the features of this disease, which leads to rapidity and certainty of diagnosis and to a proper estimation of severity in the individual case; *secondly*, a recognition of the approved value of serum as a specific measure (not to be neglected on account of any preoccupation with the unsupported claims of bacteriophage); *thirdly*, a conformity of practice with theory, especially in those general measures affecting circulation and nutrition; and, *fourthly*, a restraint in the use of solutions in local irrigation of the colon, where therapy should be physical from the irrigation itself rather than chemical from any substance in solution.

RUPTURE OF THE POPLITEAL ARTERY AND VEIN

BY

W. ARKLAY STEEL, M.D., CH.B., M.R.C.P.

MEDICAL SUPERINTENDENT, HILLINGDON COUNTY HOSPITAL

No matter how extensive and varied the individual's experience, the occurrence of unusual cases constantly reminds him of the humility of his erudition. The multiplicity and variety of injuries met with in the everyday practice of traumatic surgery surely suggest sufficient responsibilities to the surgeon to render the recognition of the conditions and the possibilities of their treatment an absolute necessity. So often the balance of the issue depends on an accurate diagnosis and a preconceived line of treatment. It is because it is considered that this rare injury demands treatment so urgent that every hour, or even minute, counts in its success, that this record of a case and a few observations are published.

Case Report

A tram driver, aged 48, was knocked down on March 16th, 1935, by a lorry, which had mounted the pavement to avoid colliding with an Austin Seven and a tramcar which had pulled up suddenly in front of it. The lorry weighed 2½ tons and carried a six-ton load, and the off-side front wheel was said to have passed over both of the man's legs in the region of the knee. The man was unable to walk, and he was admitted to Hillingdon County Hospital. On admission he was not very shocked, but complained of slight pain and a feeling of tightness in the right knee-joint. The temperature was 97° F., pulse 88, respirations 20. There was a small haematoma over the right olecranon process.

Examination of the right lower limb revealed very marked distortion of the contour of the knee, suggesting at first sight

gross dislocation of the knee-joint. This swelling was most pronounced on the inner side of the lower third of the thigh. The knee-joint showed a moderate effusion. A stellate fracture of the right patella without displacement of the fragments was readily palpable. There was no evidence of injury to the skin, except for a small superficial abrasion on the inner side of the knee. The thigh was tremendously swollen as far as the pelvis, and in girth was half as big again as the sound limb; the swelling was soft, and gave a feeling of fluctuation. There was no tenderness on pressure, except to a slight degree on the inner side of the limb. Passive and active movements were possible without causing pain, but the patient thought the movements were restricted, and he attributed this to the tension which he experienced in the limb. He was able to move the leg at the knee- and ankle-joints, but complained of stiffness of the toes and numbness of the foot. Sensation was present throughout the leg, but was diminished in the sole of the foot. A diagnosis of rupture of the popliteal vein, with gross contusion of the limb, was made and conservative treatment adopted, since it was felt that a collateral circulation would be maintained.

On March 17th the swelling had not increased, the foot and leg were warm, no appreciable movement in the toes could be obtained, and the sole of the foot was anaesthetic. Next day there was no movement in the toes, the sole of the foot and the toes were anaesthetic, and gangrene appeared a certainty. By March 20th there was definite gangrene of the foot. No pulsation was felt in the tibial arteries. As it was thought that the opportunity to save the limb had been missed it was decided to wait for a line of demarcation to form before carrying out amputation. Examination on March 22nd showed the gangrene to be limited to just below the knee-joint. Anaesthesia was present to the same limit, but the skin for some distance above this was not sufficiently vascularized to remain viable. By this time a blue-black ecchymosis extended on the posterior aspect of the thigh as far as the ischium, and on the lateral aspect almost to the iliac crest. For the past four days the temperature had varied from 99.8° to 100.5° F. in the evening, dropping each morning practically to normal; the pulse rate varied between 90 and 110. The patient complained of no pain, and felt comparatively fit. He had an obvious anaemia, and arrangements were made for a blood transfusion during or immediately following the operation.

OPERATION

The operation was begun under gas, oxygen, and ether anaesthesia. An Esmarch's tourniquet was applied, and anterior and posterior flaps were cut allowing for an 8 to 9 inch stump. The skin and the fascial partitions were bellied out with blood clot. The latter had interfused every plane, and reached about two-thirds up the length of the thigh. This was quickly expressed, the amputation performed, and the vessels rapidly ligatured. The tourniquet was released and the suture of the skin flaps begun, when it was seen that the patient had suddenly collapsed and died. The usual resuscitative measures were carried out, including intracardiac injection of adrenaline, but it was obvious that death had occurred with the release of the tourniquet. The suddenness of the fatal issue was thought to be due to the stale histamine-impregnated blood clot bathing the raw wound and flushing the general circulation when the tourniquet was removed. Prior to this the patient's condition had been satisfactory.

The ubiquitous blood clot had so isolated the various structures that dissection of the amputated limb was comparatively easy. The popliteal artery and vein were found completely severed, transversely, at the same level, about one inch above their bifurcations. About an inch separated the distal and proximal ends, and the vessels were occluded by a clot for one-half to three-quarters of an inch within the lumen. The vessels were inspected closely, and no macroscopic evidence of degeneration was observed. No lesion was found in the neighbouring structures, and the lower limits of the blood clot seemed to be those of the popliteal space.

Several authors mention the theory of the mechanism of the injury. It is explained that proximally the popliteal artery and vein are fixed by the tendinous arch of the adductor magnus, while distally they are fixed by the tendinous arch of the soleus and tibialis posticus and by the anterior tibial artery piercing the interosseous membrane. An additional factor in the mechanism is the proximity of the posterior surface of the femur. Further, a sudden blow or exaggerated movement causes a marked distension of the walls of that part of the vessels within the fixed points. Normally there is a restriction of extension at the knee-joint, so that any tendency to an increase of this movement leading to hyperextension and slight backward movement of the femur will separate the fixed points, and by compressing the popliteal space will increase the vascular tension. The injury to the vessel has been likened by many to a fixed, taut-drawn cord snapping when suddenly tapped or pulled.

Diagnosis

The diagnosis has been very well epitomized in an excellent article by Wakeley and Reid. The signs and symptoms would appear to vary slightly, for they describe the pain as extreme or acute, and the swelling as becoming stony hard. In the case described above the pain was slight, and the swelling was soft and fluctuant, giving the impression of underlying fluid, although no blood was obtained by aspiration in several directions. Paraesthesia of the limb, often in a descending direction to the toes, is mentioned by several. In cases of partial rupture weak pulsation may be appreciated in the tibial arteries. With those few exceptions the above description appears to be fairly typical of the condition.

There can be no doubt that this injury must be regarded as one of the most urgent emergencies, and treatment may be compared with the urgency required in arterial embolism. Treatment by embolectomy in the latter condition is unlikely to meet with success unless performed within six to ten hours of the initial impaction of the embolus. In rupture of the popliteal artery it is doubtful if the limb can be saved unless treatment is carried out long before six hours have elapsed. Knowing that the main blood supply to the limb is severed, the aim should be to conserve the collateral circulation. With a little imagination it is easy to visualize the local condition: the blood surging from the ruptured vessels, tearing its way through the tissues, and separating the structures in its course. The collateral blood vessels, which have not been torn across, are almost certainly compressed by the increased tension within the limb, rendering the maintenance of a collateral circulation and the avoidance of gangrene by conservative measures an impossibility. An early diagnosis is therefore imperative, and here the gross swelling of the limb around and above the knee-joint, the absence of pulsation in the tibial arteries, the feeling of tension experienced by the patient, the stiffness and difficulty in movement of the toes, and the dullness or loss of sensation in the sole of the foot are especially emphasized.

Treatment

With conservative treatment gangrene must surely ensue, leading to amputation of the limb. Failure of local treatment must have the same result, but several instances are recorded in which local treatment has led to the avoidance of gangrene. The treatment indicated, therefore, is to make every possible effort to conserve the limb. The earlier the treatment is begun the better the outlook, every minute counting towards a successful result. Given a diagnosis, local treatment should be carried out at once. It is likely to meet with certain success if done within three hours of the accident, and

the chances thereafter will diminish with the lapse of time. It is doubtful if recovery would be obtained when movement in the toes was impossible or if anaesthesia of the sole of the foot and toes was complete. The treatment should be to explore the popliteal space, using a tourniquet only if haemorrhage should become uncontrollable. The ruptured artery and vein will readily be found, as the site of rupture is practically constant with the divided ends, not much more than one inch apart. Ligature of the proximal and distal ends of both artery and vein should be carried out. The blood clot should be expressed, milking it down from the thigh and ensuring a thorough clearance in the popliteal space and the region of the knee-joint. The wound should then be closed without drainage, and the treatment completed by giving a blood transfusion, for, though variable, in most cases it will be found that a considerable amount of blood has been lost.

No case is recorded apparently of arteriorrhaphy proving successful. Apart from tending to precipitate thrombosis it is extremely doubtful if it would lead to better results than ligature.

In view of the fatal case recorded here, the sole case encountered, criticism may be made of this somewhat dogmatic expression of opinion. The impression of the futility of conservative treatment was so vividly marked that immediate effort made in local treatment appeals as the only common-sense procedure holding out any chance of avoiding the tragedy of an amputation. Criticism levelled at the publication of an isolated case can be disregarded: the case is so rare that it is unlikely that many will be encountered in the practice of any single surgeon, and it is possible that others may profit by what, with the wisdom of after-knowledge, have been considered mistakes.

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In his report as director of the Molteno Institute for Research in Parasitology (*Cambridge University Reporter*, May 21st, 1935) Professor D. Keilin mentions that Dr. P. Tate and Miss Vincent have continued their work under the Medical Research Council on the action of new synthetic quinoline compounds on avian malaria. A number of these compounds were found to have a strong antimalarial action, and one of them has a therapeutic index twice as great as that of plasmoquine. They also continued their work on the biology of English and Continental strains of the mosquito, *Culex pipiens*, which transmits bird malaria. Dr. H. P. Bayon investigated the effect of feeding liver to, and injecting liver extracts into, fowls suffering from the form of progressive anaemia described in 1929 as erythromyelosis. Feeding with liver, yeast, and iron increases the haemoglobin for a short time, but it does not stop the fatal course of the disease. The injection of liver preparations brings about a remarkable increase in haemoglobin and in the number of erythrocytes, the shape of which is also improved. A fowl lymphoma was transmitted by inoculation.

MECKEL'S DIVERTICULUM

BY

D. PHILIP MACGUIRE, A.B., M.D., F.A.C.S.

ASSISTANT CLINICAL PROFESSOR OF SURGERY, NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, COLUMBIA UNIVERSITY

Historical

Johann Friedrich Meckel, an eminent pathologist born in 1781, was the discoverer of Meckel's diverticulum of the intestines. He was considered the foremost comparative anatomist in Germany prior to Johannes Müller, and has been called the German Cuvier. Some of his best literary achievements consisted of his treatises on pathological anatomy (1812–18), normal human anatomy (1815), an atlas of thirty-three plates representing human abnormalities (1817–26), and his best work, "A System of Comparative Anatomy" (1821–30). Wolff's monograph, "The Development of the Intestine," was also translated by him. Meckel died when he was 52 years of age, in 1833, at the height of his career. His brother,

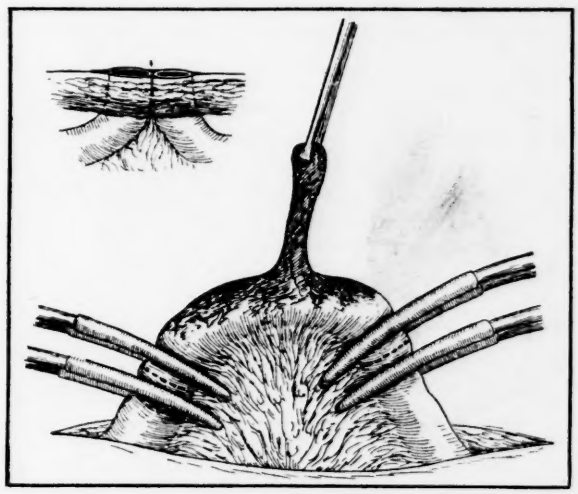


FIG. 1.

August Albrecht Meckel, became professor of anatomy and forensic medicine at Berlin in 1821, and died in 1829. Their father, Philipp Friedrich Meckel (1756–1803) of Berlin graduated from Strasbourg in 1777, and became professor of anatomy and surgery at Halle in 1779. He was the favoured obstetrician at the Russian Court. The grandfather of Johann Friedrich Meckel, of the same name, was born at Wetzlar in 1724. He graduated from the University of Göttingen, and at the graduation exercises delivered a notable dissertation on the fifth nerve, since known as Meckel's ganglion. He was the professor of anatomy and obstetrics in Berlin and the first teacher of midwifery at the Charité.

Embryology and Anatomy

Embryologists have demonstrated that, at the seventh week of foetal development, the mid-gut becomes completely closed off from the umbilical vessel (yolk sac) by the atrophy of the connecting yolk stalk. The point of final closure of the mid-gut represents a level on the future ileum, about two and a half to three inches above the ileo-caecal valve.

In approximately 2 per cent. of all individuals the intra-abdominal portion of the yolk stalk fails to disappear in a variable degree. This persistent remnant, an intestinal tubular appendage, is known as Meckel's diverticulum. The distal end may adhere to the

FIG. 2.

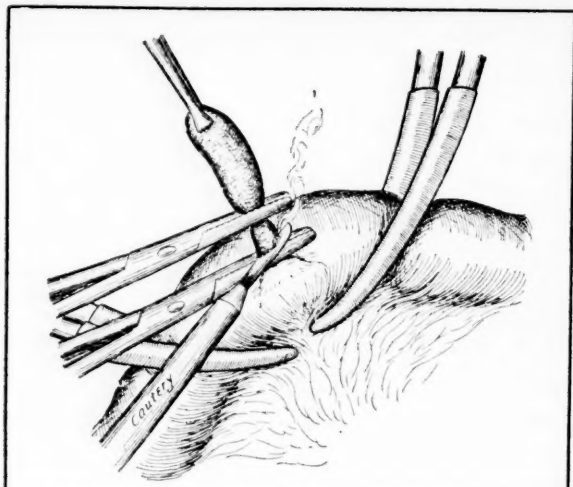
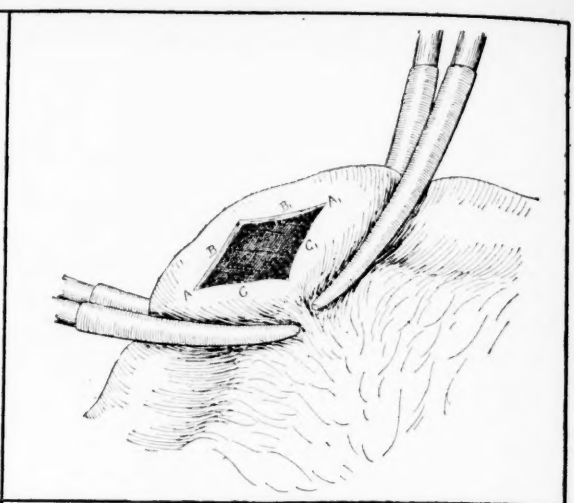


FIG 3.



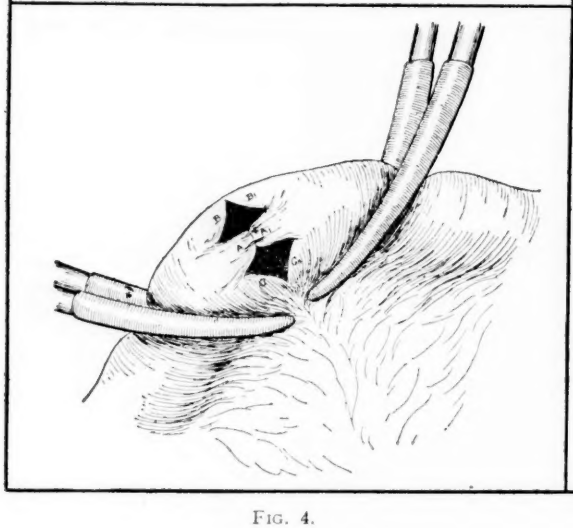


FIG. 4.

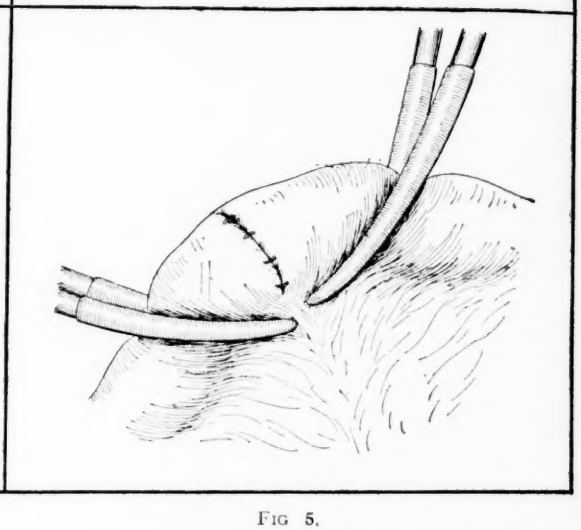


FIG 5.

umbilicus at the anterior abdominal wall. Frequently it undergoes the same pathological changes as are seen in acute appendicitis cases. Embryonal failure to complete the process of duct atrophy not only results in Meckel's diverticulum, but also in umbilical anus and a variety of clinical and pathological conditions. Cases are recorded where it has been found to be within one metre proximal to the ileo-caecal junction.

Meckel's diverticulum may be the sole content of a hernia (Littré's hernia), or it may be present with other portions of the bowel. It has been found in umbilical, inguinal, and femoral hernias. Unless some anomaly of the umbilicus is present it is impossible to diagnose this condition previous to operation. The mucous membrane and outer coats appear well developed and normal. Microscopically it shows all the normal structures, including Lieberkühn's glands and Peyer's patches. Cysts developing from Meckel's diverticulum are rare, according to McGlannan and Black. Among the congenital causes of intestinal obstruction Meckel's diverticulum is generally accepted as the one most frequently present.

Reviewing the cases of this condition one is impressed with the fact that the great majority are admitted for appendicitis in adults and for intussusception in children. The favourite site appears to be about 40 cm. proximal to the ileo-caecal valve. The most frequent complication is appendicitis, which generally appears in the acute form in adults and as intussusception in children. Since the ages, in both adults and children, vary so much, no benefit is derived from this information.

Operative Procedures

In formulating operative procedures for Meckel's diverticulum the cases must first be classified as to whether there is a general, a local, or an absence of diverticulitis. In the suppurative gangrenous or perforating types, I am strongly opposed to any operative procedure other than the deliverance of the diverticulum out of the abdomen to a position above the parietal peritoneum. To accomplish this the adhesions must be freed and the mesentery incised, so that this inflamed tube may be elevated from its bed and be extraperitonealized at all hazards as in Fig. 1. I disagree with those surgeons who, in the face of this grave danger, do a resection and enterorrhaphy. After the diverticulum has been delivered, the Paul-Mikulicz procedure may be used with the attached ileum. I have found this technique to be quite successful in dealing with conditions affecting the small intestine. Secondly, in those cases where only the dome or distal part of the diverticulum is inflamed, it is advisable to double clamp and use the technique of my new operative procedure illustrated in Figs. 2 to 5. I am opposed to the use of the inversion procedure (Fig. 6), since it merely removes the pathology from without to within the lumen, with consequent sequelae and complications resulting in the dangerous possibility of new growth or cystic degeneration, and, the most important of all, haemorrhage from ulceration and ileus from obstruction.

Unfortunately the popular and accepted operative procedure of excision leaves that portion of ileum wall

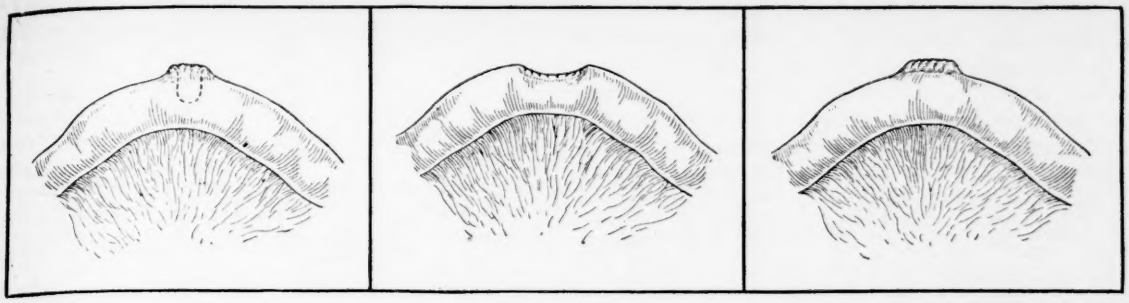


FIG. 6.—Inversion procedure.

FIG. 7.—Constriction when too much wall is removed.

FIG. 8.—Insufficient removal of wall.

which is congenitally weak. If too much of the wall is removed a constriction occurs (Fig. 7), and if not enough, as illustrated in Fig. 8, a recurrence of the same pathological condition can be expected, since only a weakened wall of gut remains. In my operative procedure (Figs. 2 to 5) the important step is the excision of the congenitally weak portion of the ileum, followed by its repair and closure. This is accomplished so that the wall of the ileum does not in any way interfere with the lumen. As shown in Fig. 3, a diamond-shaped incision is made after removal of the diverticulum and congenitally weakened area. The closure is made by suturing A to A_1, B to B_1, and C. to C_1. By the employment of this method there can be no stenosis, nor any tendency by the weakened wall to form another diverticulum.

BENEDICT'S QUALITATIVE TEST

A FURTHER MODIFICATION SUITABLE FOR ESTIMATION OF URINE GLUCOSE IN WARD OR SIDE ROOM

BY

JOSEPH FINE, M.D.

DEPARTMENT OF CHEMICAL PATHOLOGY, ST. BARTHOLOMEW'S HOSPITAL

A modification of Benedict's test has been described[1] whereby a quantitative result could be obtained, with sufficient accuracy for clinical purposes, by filtering the boiled mixture of urine and Benedict's solution and comparing the filtrate with a set of graduated blue standard tubes. This modification has the disadvantage that, under the conditions described, the Benedict's solution is completely decolorized by 2 per cent. glucose. Hence, if the filtrate is devoid of a blue colour the estimation must be repeated with diluted urine. If the test is repeated with urine diluted twofold and the filtrate is again colourless more than 4 per cent. glucose is present, and a third estimation, with urine diluted fourfold, is required for a more exact result. With this last dilution up to 8 per cent. glucose can be estimated.

Nicholson[2] has employed the same principle of estimating glucose by the unreduced copper of the Benedict solution rather than by the precipitate ; he did not filter, however, but allowed the heated mixture to stand several hours. He also increased the range of glucose detectable up to 4 per cent. by employing 0.25 c.cm. urine + 5 c.cm. Benedict's reagent in the test. This device reduces the sensitiveness of the test to half, and in any case does not obviate the necessity of repeating it with diluted urine when more than 4 per cent. glucose is present. To avoid a succession of tests the following two alternative procedures are proposed.

Method I

To two test tubes each containing 5 c.cm. of Benedict's qualitative solution add 0.5 c.cm. and 0.1 c.cm. of urine respectively ; a blood pipette should be used for delivering 0.1 c.cm. The tubes are placed in a beaker of boiling water, and after heating for five minutes the first tube is filtered, using Whatman's filter paper No. 50 (which is even better than No. 44 first proposed). If the filtrate is bluish it is compared with the standards and the second tube is disregarded. If the filtrate is water-clear or yellowish the second tube is also filtered. The second filtrate is compared with the standards, and the result obtained multiplied by five gives the approximate percentage of glucose. A more accurate result is obtained by referring to the following table, which compensates for the error arising from using 0.1 c.cm. urine only in the second tube.

No. of Standard Tube		1	2	3	4	5	6
Corresponding percentage of glucose	Using 0.5 c.cm. urine	0	0 4	0.8	1.2	1.6	2.0
	Using 0.1 c.cm. urine	0 14	2.6	4.4	6.3	8.1	10.0

Method II

This procedure is identical with the modification originally described, 0.5 c.cm. of urine being heated with 5 c.cm. of Benedict's solution for five minutes in the water-bath and the mixture filtered. Urines containing under 2 per cent. glucose yield bluish filtrates, which can be compared with the standards already described. Urines containing 2 per cent. glucose yield a water-clear filtrate, owing to complete, but just complete, precipitation of the copper. Urines containing over 2 per cent. glucose yield filtrates which are yellowish up to about 5 per cent. and gradually become brownish at higher values. The colour is due to caramelization of the glucose in excess of 2 per cent., a smell of burnt sugar becoming more and more noticeable when more than 2 per cent. is present.

The caramelized filtrate is then compared with a series of standards representing 3, 4, 5, 6, 8, and 10 per cent. glucose. These standards can be prepared by heating a series of mixtures each containing 5 c.cm. Benedict's reagent and 0.5 c.cm. of a standard glucose solution (from 3 to 10 per cent.) in a boiling-water bath for five minutes and filtering as in the test. The filtrates are sealed or stoppered in tubes and appear to keep well, though on this point observations do not go beyond a few months.

It is important that tubes should be removed from the water-bath at *exactly* five minutes, since caramelization progresses with further heating. Thus 5 per cent. glucose heated with Benedict's reagent for six minutes gave a result of 6 per cent. ; when heated ten minutes it was 8 per cent., and with fifteen minutes' heating it was 9.5 per cent. When less than 2 per cent. glucose is present, however, the same result is obtained whether heating is for five or for fifteen minutes.

Preparation of Benedict's Solution

More careful tests showed that 2 per cent. glucose did not quite decolorize ordinary Benedict's solution, 7 per cent. of the copper remaining unreduced and imparting a slight bluish colour to the filtrate. Hence a slightly increased accuracy is to be obtained by using the following copper mixture, which is equivalent to 93 per cent. of Benedict's qualitative solution.

$CuSO_4.5H_2O$	16.1 grams	contained in 1 litre.
Sodium citrate	161.0 ,,	
Anhydrous sodium carbonate	93.0 ,,	

This weaker solution should be used both for the tests and for the blue standards.

I am indebted to Dr. G. A. Harrison for facilities to carry out the above investigation in his laboratory.

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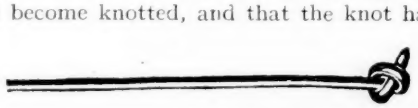
[1] Fine: *British Medical Journal*, 1934, ii, 167.
[2] Nicholson: Personal communication, and textbook on *Laboratory Medicine*.

Clinical Memoranda

Unusual Misadventure with a Urethral Whip Bougie

Recently, while dilating a urethral stricture of many years' standing, I passed, as often before in the same patient, a black gum-elastic whip bougie, size 3–5 English scale.

As usual, the slender distal portion coiled up in the bladder to allow the thicker basal part to pass through the stricture. On proceeding to withdraw the instrument I experienced a slight sense of resistance. This increased till, finally, the instrument became fixed at the seat of the stricture, and extraction was only accomplished by a forcible pull. I then found that the end of the instrument had become knotted, and that the knot had caught



on the vesical face of the stricture and brought away some of the urethral mucosa. The accompanying drawing shows the appearance of the whip as it came out.

What had happened was that the portion coiling up in the bladder had become entangled in itself to form a simple "thumb-knot," which, during the extraction of the bougie, was drawn taut close to the tip of the instrument. This, to judge from my experience of whip bougies, must be a very unusual occurrence. I may add that on the next occasion (some two weeks later) on which I used a whip bougie on the patient there was no repetition of the misadventure.

Glasgow. G. H. EDINGTON.

Agranulocytic Angina

As the number of reported cases of agranulocytic anaemia in this country is still small, and as it is not yet clear whether the disease is a rare one, or whether cases are missed because of the difficulty of recognition of the prodromal symptoms, it is well that every accredited case should be reported with as full notes as possible on the symptoms and treatment. The following one proved fatal, though pentose nucleotide had been given freely during the last five days of the illness.

CASE REPORT

A woman, aged 32, married, no children, had had pulmonary tuberculosis for the past four years, during which time artificial pneumothorax had been performed once a month. She reported ill to one of us (R. A. M.) with sore throat. Her temperature was 103° F., and the fauces, uvula, and soft palate were swollen, red, and oedematous. The following day the condition suggested an acute follicular tonsillitis; the temperature was still high. Local and general treatment was instituted, but the patient showed little response. The temperature gradually became higher and the pulse more rapid, though the patient maintained that she did not feel ill. On the eighth day the breath became malodorous, and the left tonsil was covered with a membrane; the nose was completely obstructed. Diphtheria antitoxin was given without benefit, and a throat swab was negative for diphtheria. The condition of euphoria remained.

The patient was seen on the following day by W. S. T. N. in consultation. The temperature was then 105° F. and the pulse 118. The tonsils were necrotic, and covered by a thick, yellowish membrane, which was strictly limited to the tonsils; the nasal septum was covered with a membrane. On removal of the membrane there was free bleeding. Both sides of the neck looked full, due to slight enlargement of the cervical glands. Swabs were taken from the nose and throat. There was no evidence of diphtheria, but streptococci and staphylococci were present in abundance. The blood examination by one of us (S. M.) showed a complete absence of polymorphonuclear cells, which confirmed the diagnosis of agranulocytic anaemia. Details of this and subsequent examinations are as follows.

Chart of Blood Counts and Pentnucleotide

Day	Pentnucleotide (c.cm.)	Haemoglobin per cent.	Red Cells in Millions per c.mm.	White Cells per c.mm.	Differential Count		
					Granulocytes	Lymphocytes	Monocytes
1	20	65	4.0	2,400	0	84	16
2	30						
3	30	65	3.6	4,200	0	87	13
4	30						
5	30	55	3.6	2,400	4	82	14

As soon as the diagnosis was confirmed 10 c.cm. of pentose nucleotide in normal saline was given intravenously and the same amount intramuscularly. Subsequently three intramuscular injections, each 10 c.cm. of pentose nucleotide, were given daily without effect. The patient succumbed on the sixth day from the commencement of the pentose nucleotide injections without having shown the least response to treatment.

The case illustrates the difficulty of early diagnosis owing to the resemblance to a streptococcal infection in the early stage and later to a diphtheritic or Vincent's infection. It also conforms to the more grave type of the disease in showing no response to pentose nucleotide. The question of blood transfusion was discussed, and the possibility of *x*-ray radiation of the long bones, but neither of these subsidiary methods of treatment was tried as the patient gave no evidence of improvement.

The early recognition of the disease is of the greatest importance because of the urgent necessity for appropriate and energetic treatment at the earliest moment. In pentose nucleotide we have perhaps the most hopeful remedy for this deadly condition, but recourse to blood transfusions and *x*-ray irradiation of the long bones may be necessary. The characteristic features of agranulocytic anaemia are necrotic ulcers of mucous membranes, usually in the mouth, associated with marked and characteristic changes in the white cells of the blood. The salient clinical features in order of their occurrence are: discomfort or malaise, rigors, fever, sore throat, ulceration, prostration often associated with dysphagia, and lymphadenitis. Associated with this syndrome there is often the feeling of well-being of the patient in complete contradiction to the clinical condition.

R. A. MORRIS, M.D.
SINCLAIR MILLER, M.D., M.R.C.P.
W. S. THACKER NEVILLE, M.D., F.R.C.S.Ed.

Harrogate.

Two Cases of Transposition of the Viscera in One Family

At the Annual Meeting of the British Medical Association held at Liverpool in 1912 I showed a case of transposition of the viscera in a youth of 17, with *x*-ray photographs, to the Section of Anatomy. A short account of the case was published in the *Journal* of September 28th, 1912 (p. 770). This man is alive and well. Recently I was informed that his sister, aged 21, also had transposition of the viscera. Physical and *x*-ray examinations have proved this statement to be correct. I am indebted to Dr. A. R. Barber for information regarding this sister and for being allowed to examine her; also to Dr. Edward Fox for the *x*-ray examination. The discovery of two cases of this rare developmental abnormality in one family seems worthy of record.

Warrington. J. S. MANSON, M.D.

Avertin for Tetanus Convulsions

The following case may be worthy of placing on record, because it is one in which avertin was used to control convulsions in tetanus.

The patient was a boy, aged 10, who was admitted to the Royal Infirmary, Sheffield, on January 19th, 1935. On January 4th, whilst playing, he had cut his left knee on a piece of rusty corrugated iron. The cut was through the whole of the skin, and exposed the fascia over the patella. Sutures were inserted by the patient's own doctor. On January 17th the parents noticed that the child's jaw was slightly clenched. It was a little more pronounced on the following two days.

On admission the child's condition was quite good; no convulsions had occurred. The jaw was slightly stiff, and the abdomen a little rigid. Temperature 99.4° F., pulse 96, respirations 28. The wound was healed except for a little scab. Lumbar puncture showed normal cerebro-spinal fluid; 20,000 units of antitetanic serum were given intramuscularly at 1 a.m., and another 20,000 at 7.45 a.m.

On January 20th the symptoms were all more pronounced, and trismus made it difficult to give food by mouth. Two further injections of antitetanic serum (20,000 units) were given intrathecally and intramuscularly. Professor Florey saw the case, and suggested that avertin might be of benefit.

On January 21st the first convulsion occurred; 1.4 c.cm. avertin was given, with coramine 1 c.cm. at midnight. Glucose was administered by rectum. At 2 p.m. (January 22nd) the scar was excised under gas and oxygen with avertin as a base given an hour before; 40,000 units antitetanic serum, with 15 per cent. glucose, were given under the anaesthetic. During recovery frequent convulsions occurred, and necessitated the administration of chloroform. Avertin in doses of 1.4 c.cm. was given at two- to four-hourly intervals when consciousness appeared to be returning.

On January 22nd a cannula was tied into the median basilic vein, as rectal salines and glucose were not being retained. Half a pint of 10 per cent. glucose was administered in this way four-hourly. Similar treatment was maintained until January 25th, when symptoms appeared to have subsided sufficiently to warrant stopping treatment. From the 26th to the 30th potassium bromide, 7 grains, and chloral, 7 grains, were given four-hourly.

After January 22nd the child was removed from isolation, as no further convulsions had occurred, and placed in the main ward. The abdominal muscles remained in a spastic state for three more weeks, and for a fortnight there was definite trismus. For a short time diplopia occurred during convalescence, but gradually passed off. No tetanus bacilli were grown from the excised scar.

My thanks are due to Mr. St. Leger Brockman for allowing me to treat the case, and for permission to publish it.

A. W. FAWCETT, M.B., F.R.C.S.
Honorary Assistant Surgeon, Royal Infirmary, Sheffield.

Reviews

A NEW APPROACH TO THERAPEUTICS

The Essentials of Materia Medica, Pharmacology and Therapeutics,[1] by Professor R. H. MICKS, represents an interesting departure in textbooks on this subject. The aim of the author has been to teach students and practitioners of medicine what can be done with those drugs that are of real therapeutic importance.

The subject is dealt with from the clinical aspect, and the drugs chosen for notice are grouped according to the effects it is desired to produce. The volume is written in a critical spirit, for the author does not hesitate to criticize freely traditional beliefs, and his candour about the merits of many proprietary remedies is refreshing. This attitude, however, sometimes involves him in statements that appear rather rash. For example, it is suggested that the toxic action of emetine on the heart is a myth founded on crude pharmacological experiments, whereas in reality the belief in this action is based on clinical observation, and the term "emetine pulse" is used by writers with a lifelong experience of the treatment of tropical diseases. Similarly, the author declares that tartar emetic is probably just as effective in tropical diseases as any of the newer organic antimonials, but this view is contrary to the usual opinion held in India. In general, however, the account given of the action of drugs is very accurate, and the critical spirit of the author is welcome, for it may help to clear up some of the debris that still encumbers therapeutics. For example, hypnotics of the sulphonal group are dismissed with a short obituary notice expounding their disadvantages.

An attractive feature of this book is the insertion of concise pieces of clinical advice and warnings against clinical pitfalls. This is a matter of importance, since if potent drugs are to be used with safety in effective doses it is necessary to have a clear idea of their possible dangers. The book is written in an agreeable style, and provides easy and interesting reading. As a concise account of the essentials of modern therapeutics it deserves wide popularity among students and practitioners of medicine.

FRENCH VIEWS ON SQUINT

The increasing attention now given to the treatment of squint is a sign of the times. Not very long ago parents were mostly content to let their children "grow out of it." Later the child became aware of this gross defect in his or her personal appearance, and demanded a remedy. Now there is a widespread recognition of the great loss sustained by squint, loss of that most human faculty of binocular vision, which has made man the cunning workman and enthusiastic sportsman that he is. The re-education of squinters is now an everyday task, laborious indeed, demanding more than ordinary persistence and patience, but worth the effort in the results attained. France has a notable record in the growth of this practice through the long years of labour by Javal, and now we have a book giving an account of the practice of one French school by Drs. A. CANTONNET and J. FILLIOZAT, with the assistance of Dr. Fombeure.[2] The book has been admirably translated into English by another French doctor.

Dr. Cantonnet is an out-and-out enthusiast for his work, an admirable characteristic. But he puts the claim of

[1] *The Essentials of Materia Medica, Pharmacology and Therapeutics.* By R. H. Micks, M.D., F.R.C.P.I. London: J. and A. Churchill. 1935. (Pp. 395. 12s. 6d.)

[2] *Strabismus. Its Re-education: The Physiology and Pathology of Binocular Vision.* By A. Cantonnet and J. Filliozat. London: M. Wiseman and Co., Ltd. (Pp. 379; 83 figures. 21s. net.)

France too high. He says: "The idea of treating strabismus by re-education is of French conception, and in this respect three names (Javal, Parinaud, Remy above all) are not to be forgotten." It is evident that he is unacquainted with the large amount of work done in this country and in America in the development of what is commonly called "orthoptic treatment." Further, the conception of the idea goes far beyond the period that our authors have in mind. The first to attempt to bring the squinting eye to its duties was Erasmus Darwin in 1778. His practice was an epitome of present-day practice; indeed, in some respects he did more than we dare to do, for he fixed his instrument on to the patient's face and made him wear it. His practice was not that of a solitary observer born out of due time: the work was carried on by Mackenzie, Priestley Smith, and Worth, and many others down to this day.

The authors deal in succession with the physiological and pathological aspects of binocular vision; then the re-education of the squinter and the problems that arise therein. They give descriptions of a great variety of instruments for use in training; some of them are simple and ingenious, others somewhat unduly complicated. There is rather a tendency to over-elaboration of methods. The authors claim that "70 per cent. of squinters can be re-educated." But they further say that a cure can only be obtained by effort. "Broadly speaking, and as a rough estimate, those patients who are in the most favourable condition for re-education require from one week to one week and a half per degree of strabismus—that is, about thirty weeks in the case of a strabismus of twenty degrees. A weekly séance in the consulting room, supplemented by regular home work at the rate of at least forty to sixty minutes daily in two sittings of twenty to thirty minutes, represents the minimum to devote to the cure."

It would appear that there is in France a conflict between two schools: between those who consider operation the true method, and those who stress re-education. The authors discuss the problem at some length, and conclude: "We are absolutely convinced of the importance of re-education of binocular vision, because it leads to a true cure, while the correction of the defect afforded by a surgical operation only affects the aesthetic appearance of the subject." Experience in this country shows that both measures have their proper place in the scheme of treatment.

SHELL-FISH AND ENTERIC FEVER

The work on this subject[3] by Dr. V. M. BELIN, director of the Bacteriological Institute at Tours, is one which will interest alike the bacteriologist, the clinician, and the hygienist. The book is divided into five chapters. The first contains a bacteriological and experimental study of enteric fever, followed by a clinical description of the disease due to oysters, which is characterized by the onset within twenty-four hours of fever and gastro-intestinal disturbance, and after an interval of some days, during which the symptoms improve or entirely disappear, by a severe and frequently fatal attack. In the second chapter the author discusses how contamination of the shellfish takes place in the sea, in the shops where they are being sold, and in the consumers' homes. In the third chapter the measures for protecting the public from the contamination of oysters and shellfish are considered, and are all proved to be inadequate. The consequence of this, as Dr. Belin shows in the following chapter, is that during the last fifteen years more than 100,000 cases of "ostreo-typhoid" have occurred in France, of which 25,000 ended fatally. In the last chapter he proposes various prophylactic measures to be carried out by the Ministry of Health, such as strict supervision of the oyster parks, prevention of their contamination by sewage and close inspection of the conditions of their sale, insistence on notification of every case, infliction of severe penalties in case of neglect, and the precautions to be taken by consumers of oysters and other shellfish. A remarkably full bibliography is appended.

[3] *Coquillages et fièvres typhoïdes. Un point d'histoire contemporaine.* By Dr. V. M. Belin. Paris: Les Presses Universitaires de France. 1934. (Pp. 230. 15 fr.)

OTO-RHINO-LARYNGOLOGY

The *Transactions*[4] of the fortieth annual meeting of the American Laryngological, Rhinological, and Otological Society for 1934 contains a large number of papers. Dr. Henry Dintenfass contributes an important paper entitled "Accidental Injury of the Lateral (Transverse) Sinus during Mastoidectomy." The accident is almost always avoidable, but there are occasional cases where it is unavoidable whatever skill and care be exercised. A knowledge of anatomy is the first important factor; a small mastoid process with a tongue-like apex indicates anterior displacement of the sinus. In the brachycephalic skull—a short skull with a short occiput—the lateral sinus is much nearer to the posterior canal wall than in the dolichocephalic type—a long skull with a long occiput. The right sinus is generally both more superficial and further forward than the left, which accounts for the more frequent injuries on the right side. It may be necessary, if the sinus is in close contact with the posterior wall of the canal and renders the antrum inaccessible, to cut down the posterior wall of the canal as in the radical operation and enter the antrum from within outwards Mere sponging of a sinus covered with granulations may cause injury, or again, if there has been a previous operation, the sinus may be adherent to the periosteum. Most injuries are caused by the curette, some with biting instruments or with burrs, very few with the gouge. Injury of the emissary vein is sometimes dangerous from a resulting septic thrombosis. Injury of the lateral sinus is a dangerous accident apart from haemorrhage, as 26 per cent. of such injuries are followed by septic thrombophlebitis, which may be fatal, for the mortality, according to the literature, is 18 per cent., and in the replies to a questionary, is about 6 per cent.

There are also papers by J. P. Dworetzky on "Laryngo-pulmonary tuberculosis and by Samuel M. Beale on "Clinical Uses of Insulin." A careful paper is entitled "A Study of Aural Tuberculosis," by John Miller. This gives a full account of personal observations, with an excellent bibliography. Gabriel Tucker presents an account of 200 cases of cancer of the larynx. Only 2 per cent. occurred in negroes, and all four patients died of cancer. Fifty-six per cent. of the cases were considered suitable for operative treatment. The author believes that earlier diagnosis would have rendered at least 75 per cent. amenable to cure by surgery. Louis Clerf also writes on "Carcinoma of the Larynx treated by Laryngo-fissure." Murdoch Equen writes on "The Biplane Fluoroscope in Bronchoscopy." This short paper, full of information and interest, includes two case reports. Holland Stevenson writes on "Mycotic Infections of the Maxillary Sinuses." This paper is well illustrated, and includes seven case reports. The author believes the fungus to be an active agent in the inflammation, and not a simple saprophyte. Frederick T. Hill contributes "Post-operative Observations upon the Sphenoidal Sinus

[4] Published by the American Laryngological Society, 44, West 49th Street, New York City.

following Ethmo-sphenoid Operations," and Harris P. Vail writes on the "Sphenoidal Sinus in Relation to Reflex Pain in the Head."

An interesting paper by Eugene Lewis is on "Cavernous Sinus Thrombosis: Recovery confirmed by Necropsy Three Years Later." This case of cavernous sinus thrombosis developed from a boil on the cheek in a boy of 15. He died three years later from mastoid disease, with a brain abscess. There is a careful account of the pathological changes produced, with good illustrations. Samuel J. Kopetzky, writing on "The Early Diagnosis of Otitic Meningitis," calls attention to an increase in the lactic acid content of the cerebro-spinal fluid in the very early stages of meningitis. Frederick Figi reports on "Tracheotomy from a Study of 200 Cases at the Mayo Clinic." This includes a mention of every possible condition demanding the operation, except diphtheria, and seems to indicate every possible complication and difficulty. Kenneth Day writes on "The Etiological Factors in the Formation of Cholesteatoma." The author considers that moisture is the primary and major factor, and that only anhydrous solutions should be used in the presence of cholesteatoma. The presence of moisture will prevent cure, and cause recurrence.

THE SIWA OASIS

In the autumn of 1932 "A" Squadron of the 12th Royal Lancers were ordered to make an armoured-car journey from Cairo to the Siwa Oasis on the borders of Egypt and of Italian Cyrenaica; and Major T. I. DUN of the Royal Army Medical Corps was fortunate enough to be medical officer to this reconnaissance, which was presumably arranged primarily as a test of the modern armoured car called upon to tackle desert conditions. As a result of careful forethought and very adequate preparations, the expedition passed off most successfully, and everything went according to plan, with the utmost credit to the officers and men who made up the party. On returning to Cairo Major Dun wrote an account of the whole trip, and then conceived the further ambition of publishing it in a volume *de luxe*, to be produced in Egypt by Egyptians. This ambition he has successfully brought to fruition, and the result is a most interesting folio, artistically illustrated and most lavishly designed throughout.[5] The route taken was from Cairo via the salt lakes of Wadi Natrum to Burg El Arab on the coast west of Alexandria, thence to Sollum by way of Mersa Matruh; thence southwards along the Italian frontier to Siwa, and from there back to Matruh by a direct short cut across the sands of the desert, completing a triangle of which Sollum and Mersa Matruh formed the northern corners and Siwa the southern apex. From Matruh the expedition retraced its steps, or rather its wheel tracks, to Cairo.

Major Dun has gone a long way beyond a mere narrative of his experiences with the Lancers, interesting though they were; he has embarked on a short history of what is known of the habits and customs of those who dwell at Siwa and in the adjacent Libyan desert, followed by many pages of photographs taken during the reconnaissance. Every narrative page is decorated with woodcuts, by a perfect host of craftsmen from the School of Fine Art, Cairo. It is, in fact, the collaboration of the Egyptian-born in the production which gives it especial interest and importance; all those Egyptians who hope to see their country take a place in civilization worthy of its contributions to human progress three or four thousand years ago ought to be profoundly grateful to the author for the trouble he has taken to enlist their fellow countrymen as his collaborators. If the illustrations are not all of equal merit, and the prose style errs on the florid side, it is nevertheless true to say that the volume is full of interest from cover to cover—and this in the literal sense, for the black and gold cover designs are by the author himself, who seems to be equally at home with pen, with pencil, and with brush.

[5] Egypt. E. and R. Schindler; Glasgow: J. Smith and Son, Ltd. (18s. 6d.; De Luxe Edition, 26s. 6d.)

Notes on Books

The well-known German equivalent of what used to be called "Hutchison and Rainy" is the Seifert-Müller *Manual of Physical and Clinical Diagnosis*,[6] which is now available in a second English edition, being the translation from the thirty-first German edition by Dr. E. Cowles Andrus. It is essentially a practical handbook suitable for students in their clinical years, and for practitioners as a reference book throughout their contact with problems of diagnosis. Certain additions have been made to include procedures to which the American student and physician are accustomed, and, while it may be recorded that this manual is good of its kind, there is no reason why it should be preferred to English books on clinical methods.

Messrs. Hutchinson and Co. are publishing a *Technical and Scientific Encyclopaedia*, under the editorship of Messrs. C. F. TWENEY and I. P. SHIRSHOV.[7] The work is to be completed in three volumes, the first of which has just been issued. When completed it will cover the fields of physics, electricity, chemistry, geology, radiology, mineralogy, crystallography, geophysics, navigation and ship-construction, aeronautics, textile industries, and metallurgy. The articles are by experts in the several subjects; many of them run almost to book length, and where necessary are fully illustrated. In addition to the more lengthy articles, the terms used in pure and applied science, the principal manufacturing industries, and the skilled trades are defined, and commodities of botanical and zoological origin are named and described. The present volume, containing six hundred and seventy pages and comprising the entries from A to Dir, is well got up, the paper is good, and the type clear. As an encyclopaedia of moderate size the work is likely to prove of value to those interested in the subjects with which it deals. No strictly medical subjects are included.

Drs. WALLER and KAATZ's *Medical Dictionary*[8] (English–German, Part I) is full of so many unusual English words that it must be studied with the *Oxford English Dictionary* close at hand. Different German equivalents are given for "aborsement," "abortment," and "abortion," although the first two words are obsolete variants of the third. "Acclimated" is distinguished from "acclimatized." "Acosmy" apparently means emaciation or pallor, which seems a long cry from "acosmism"—denial of the existence of the universe. Few English readers will recognize "addulce" and "addemonia," and not many will be aware that the English "natch" is the same as the German *hinterteil*. Nor does it seem necessary to include in a medical dictionary the words "nastiness" and "nasturtium," and to leave out "achylia." The usefulness of this dictionary is limited by the authors' obvious ignorance of modern English.

We have received the third volume of the *Proceedings* of the Fifth Argentine Congress of Medicine,[9] which was held at Rosario from September 2nd to 9th, 1934. The volume, which consists of nearly a thousand pages, is devoted to biology, with seven subsections: (1) general biology; (2) morphology, including anatomy, histology, and embryology; (3) physiology, chemistry, and biological physics; (4) pharmacology; (5) morbid anatomy; (6) haematology; and (7) microbiology.

[6] Philadelphia and London: J. B. Lippincott Company. 1935. (Pp. 561; 152 figures, 5 coloured. 25s. net.)

[7] London: Hutchinson and Co. (Publishers) Ltd. 1935. (28s.)

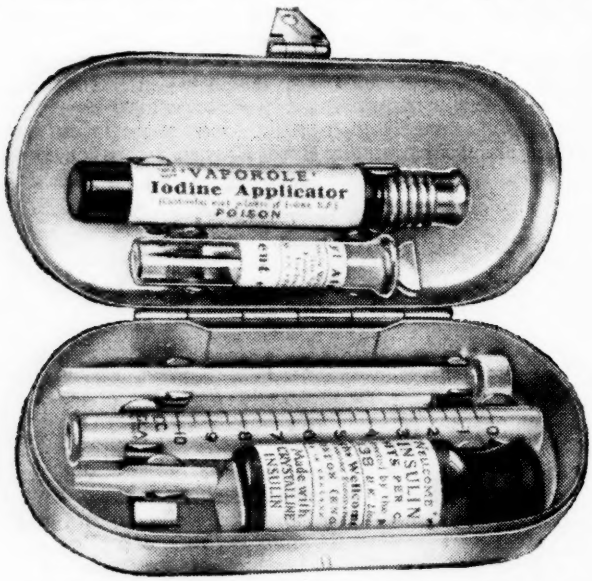
[8] *English-German and German-English Medical Dictionary, Part I.* By R. Joseph Waller, M.D., and Moritz Kaatz, M.D. Fourth edition. Leipzig and Vienna: Franz Deuticke. 1934. (Pp. 201. M.6.)

[9] *Quinto Congreso Nacional de Medicina.* Actas y Trabajos. Tome III, Biologie. 1934. Rosario: Talleres graficos Pomponii. (Pp. 991.)

Preparations and Appliances

AN INSULIN POCKET-CASE

The "Wellcome" brand insulin pocket-case (No. 46) is a serviceable, compact outfit designed to fit comfortably into the pocket; measurements: $3\frac{3}{4} \times 1\frac{5}{8} \times 1$ inches. The case contains the materials and apparatus necessary for the administration of insulin, and is specially useful when injections are to be self-administered. The contents are as follows: (1) "Agla" insulin syringe (1 c.cm. graduated in twentieths). (2) "Agla" surgical needle (rustless steel), in glass-stoppered container. The container is intended for ethyl alcohol, in which the needle will be immersed, thus maintaining it in an aseptic condition. (3) A 5 c.cm. rubber-capped phial of "Wellcome" brand insulin containing 100 units. (4) "Vaporole" iodine applicator for



use when sterilizing the skin at the site of injection and the rubber cap on the insulin phial prior to removal of a dose. The pocket-case is made of nickel-plated metal with a highly polished exterior. Price to the medical profession, 22s. 6d.

PNEUMOTHORAX APPARATUS

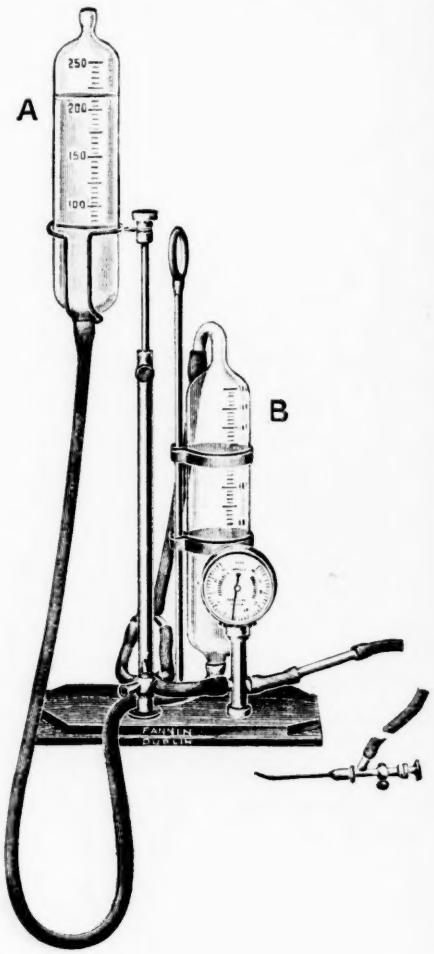
DR. R. V. MURPHY (Dublin) writes:

The pneumothorax apparatus shown in the accompanying figure consists of a movable cylinder, A, which is used to fill or empty cylinder B of fixed position. This cylinder is of 250 c.cm. capacity. The cylinders are open at both ends. By means of a rubber tube connecting the lower end of each, fluid may be passed from one cylinder to the other. Cylinder A sits in a cradle fitted to a telescope rod, which slides up and down and can be locked when extended. When not in use cylinder A in its cradle is lowered so that it may be housed under the cover of the apparatus. From the top of cylinder B a communicating rubber tube branches into two arms, each of which is connected with one of the four arms of a two-way tap. The third arm of this tap communicates with the atmosphere, the fourth with a tube leading to the pleural needle. Fixed in the course of this tube is a manometer of the aneroid pattern. The two-way tap is controlled by a lever, by means of which cylinder B may be put in communication with: (1) the atmosphere, (2) neither the atmosphere nor the pleura, and (3) the pleura. When it is in the first or second position readings of pleural pressure may be taken on the manometer. The lever is operated by a light touch of the finger.

The apparatus is light, compact, and portable. It is simple in operation, the working of it requiring the use of one hand only throughout. As much air or gas as is needed may be run into (or removed from) the pleural cavity. The time used in refilling the measuring cylinder at each operation should not amount to more than a matter of seconds, and may be employed in taking readings of pleural pressure. A positive pressure may be instantly arrested or reversed. The tap should be in position 1 when the apparatus is not in use. This allows the levels of the fluid in the two cylinders to be at the same height, and therefore obviates any risk of overflow.

THE PNEUMOTHORAX APPARATUS IN USE

The cover having been removed, the cradle on the telescope rod carrying cylinder A is raised to the top and fixed. The telescope rod is now extended to the desired height and fixed. The procedure is then as follows: (1) With two-way tap communicating with atmosphere (position 1), cylinder A is lifted from its cradle and lowered by hand, so that the fluid is withdrawn from cylinder B, which is therefore filled with air. (2)



The two-way tap is now put in position 2, and cylinder A is replaced in its cradle. (3) When the needle is in the pleural cavity (as shown by the movement of the needle on the manometer) the tap is moved to position 3, and the contained air allowed to flow from cylinder B to the pleura.

When 250 c.cm. have been delivered the tap is changed to position 1 (a reading of pleural pressure may now be taken), and the process repeated as required. If oxygen or other gas is required instead of air the "atmospheric" arm should be connected with a cylinder containing the desired gas. In this case there is no need to remove the cylinder from its cradle throughout, a fine adjustment tap controlling the supply of gas to cylinder B, the two-way tap of the apparatus being used as above. Air may be removed from the pleural cavity and measured if cylinder A is raised when the tap is in position 1 and lowered when in position 3. Readings of pleural pressure may be taken on the manometer.

Glass tubing lightly packed with 1-inch ribbon gauze has been used for filtering for some years, and has been found quite satisfactory. There are two containers on top of the cover (not illustrated) to carry needles, syringes, ampoules, etc.

The apparatus should always be carried by the handle, and if it is placed on the floor or the seat of a motor car precautions should be taken that, in the event of a sudden application of the brakes, it does not topple over.

The over-all measurements are approximately $13\frac{1}{2} \times 9 \times 5$ inches, and the weight of the apparatus, with accessories included, is $5\frac{1}{2}$ lb. It is made by Fannin and Co., 41, Grafton Street, Dublin.

British Medical Journal

SATURDAY, JUNE 8th, 1935

ABDOMINAL PAIN IN CHILDREN

An attentive hearing is assured the surgeon who relates his experience in the pastures of the physician, and readers of Professor Rendle Short's lecture on "Abdominal Pain in Children," published elsewhere in this issue, will quickly find that their anticipated pleasure is realized to the full. The value of the lecture is much enhanced, it may be suggested, by the fact that for many years Professor Rendle Short has seen every case of abdominal pain occurring in a public school for boys, and by this study of really unselected material he maintains his interest in the strictly medical aspect of his subject. The verdict that "there is no call for surgery," so often given over the sick-bed of a child with such admirable heartiness, is in no sense a positive diagnosis, and even the most fastidious will find no trace of that attitude in the lecture. All this is very much as it should be, and it enables the lecturer to start his subject as far back as the pain due to wrong feeding. He tends to absolve the modern schoolboy from undue indulgence in green apples and unripe plums; yet the apple at least has a sinister tradition of respectable antiquity, and boys are not always in the disciplined regime of a boarding school. But he holds the view that the great majority of abdominal pains in children are not due to some single indiscretion in diet, and doubtless when it comes to pain of real significance few would disagree with this opinion. This leads him to give a strong warning against the routine use of an aperient in such cases, a habit which, he says, "kills hundreds of children every year in this country." Such a statement from a professor of surgery gives us a jolt, as no doubt he intended. Is such a well-recognized error as purging a possible case of appendicitis still as widespread as he seems to imply?

With so large a subject as abdominal pain in children no classification is likely to be satisfactory, and the attempt to divide the cases into those with diarrhoea and those without does not take us very far. It is probably true that the first group contains fewer surgical cases than the second, but the exceptions are so numerous and of such importance that, if useful in enabling a lecturer to come to grips with his subject, the classification is not of much practical value. His further subdivision by age incidence is one that seldom fails to be a help in the study of disease in childhood. After passing in review the various forms of abdominal tuberculosis and other conditions associated with minor degrees of abdominal pain, the lecturer proceeds to deal with the three great abdominal catastrophes of childhood in which pain is so prominent a feature: namely, intussusception, appendicitis, and pneumococcal peritonitis. He paints a graphic picture of the small child with intussusception, and reproduces faithfully the prostration induced by the attacks of agonizing pain. This is one of the conditions in which the case must not be left undiagnosed, and Professor Rendle Short does well to go into the possible difficulties in reaching an assured decision. He emphasizes the importance of the digital examination of the bowel which may produce evidence of the presence of blood and mucus from within, even though the earliest motion passed after the onset of the disorder may be apparently normal. In his experience the characteristic sausage-shaped tumour cannot be recognized without an anaesthetic in about half the cases, and he might perhaps have mentioned the possible help in diagnosis to be obtained by observing the passage of an opaque enema under the fluorescent screen. Where radiography is available this procedure is quick and accurate, and free from the objections that might be urged against the use of an anaesthetic for diagnostic purposes.

In dealing with pneumococcal peritonitis the lecturer is particularly helpful. This is a condition which fortunately is comparatively uncommon, but its very infrequency adds to the difficulty of its recognition. Usually arising in girls of school age, it is ushered in by transient diarrhoea, rise of temperature, and a spreading abdominal pain without definite localization to the right iliac fossa. Initial vomiting is not constant, and the presence of generalized peritonitis, often accompanied by extremely severe pain and without any obvious cause, is the condition which has to be recognized. Occasionally the onset is a much milder affair, and the disease may be mistaken for tuberculous peritonitis, though an examination of the leucocytes of the blood should prevent such an error. The difficulty in diagnosing pneumococcal peritonitis is very real. On the one hand the surgeon is faced with the danger of leaving an inflammation originating in the appendix, and on the other with the inadvisability of operating on a pneumococcal peritonitis at a stage when laparotomy is "worse than useless." Professor Rendle Short, who uses the phrase we have quoted, agrees with those who would postpone operation until a localized abscess is formed and advocates the Ochsner-Sherren line of treatment in the early stages. He emphasizes, however, the great danger of the disease by whatever method it may be treated. In the recognition of acute appendicitis he lays stress on the march of the symptoms as they appear in the developing case, and concludes with some very interesting figures bearing upon the frequency of inflamed mesenteric glands as a source of abdominal pain simulating that of appendicitis.

DEFY THE FOUL FIEND

Certainly if the world has the will to be less noisy the Noise Abatement Exhibition (open until the end of the month at the Science Museum, South Kensington) shows it the way. Exhibits from the National Physical Laboratory, the Home Office Industrial Museum, other official and semi-official bodies, and private firms, demonstrate how buildings may be quieted by having their walls lined with absorbent material and their floors

insulated, and by having lifts in which the cushioning of the contactors deadens alike the electrical hum and the mechanical noises. By appropriate modifications in design the noise from every kind of engine can be greatly lessened, the scream may be taken out of the circular saw, and a cork mat may eliminate the distressing noise which often comes from fans, transformers, and such constructions. On the road there are the silenced motor-cycle, and rubber for blocks, for wheels and tyres, and for horse-shoes ; and the city of Westminster is setting a noble example by instructing its contractors to use during this summer a silenced pneumatic road drill. Even in the aeroplane, where the noise fiend is at its worst, the Air Ministry shows that research is proceeding on the diminution of the noise produced by the airscrew, which in one type is capable of emitting probably the loudest noise ever produced.

But it is in the modern house that the science of silencing has been most applied. Here we have various sound-deadening partitions, sound-absorbing plasters and panels, a silent gear for doors, while even the hearth has had attention, for it is said that in flats a good deal of annoyance is caused to neighbours by poking the fire, and here the fire-irons are made to trouble no longer. A good deal of household clatter also arises from enamel jugs, buckets, dustbins, and so forth, and it is shown how rubber rings may reduce this to a minimum. What strikes us as very commendable is a silent siphonic water-closet fitting, in which the flush is inaudible outside the compartment. A committee of the Royal Institute of British Architects is gathering information of a practical kind and is making recommendations in regard to the insulation of habitable rooms. Broadcasting House, which has lent a model of itself to the exhibition, is, of course, an extreme example of sound insulation, and if it were copied in domestic construction there might soon be complaints of uncanny silence. When all these silencing arrangements fail the Industrial Health Research Board demonstrates how the tormented philosopher may fall back on ear defenders, protectors, stops, and plugs. Devices of this kind are usually for those exposed to violent noise, like gun-firing or boiler-making. They are of great variety ; some can be moulded to the ear, others require careful fitting. The same Board exhibits charts illustrating how ear acuity for speech sounds among riveters and others has been diminished. The ear protects itself by becoming less sensitive, but it loses sensitiveness not only to the overpowering sound but to sounds which it is necessary to hear in ordinary life. Another exhibit from the same source reveals by charts the appreciable loss in personal efficiency resulting from exposure to noise of high intensity among persons (cotton weavers) who for years had been accustomed to a noisy environment.

A noise map of London is on view indicating the danger spots where street din is excessive. Fleet Street, as is only natural, is pre-eminent in noise production. But it is rather startling to find how frequently the neighbourhood of a great hospital is marked by the red button. Hospitals themselves—and nursing homes too—are often noisy places. Even in some of the most modern institutions the exacerbating effect of noise seems to have been overlooked. A special exhibit is included showing how hospital noises may be shifted to the "soft pedal" by treatment of walls and passages. This first exhibition of the Anti-Noise League is full of enterprise and of provocation. Lord Horder, the chairman of the League, states that it is intended to make the visitor belligerent, to make him say, " I do not see why I should stand it—if it is so easily overcome as all that." There is, we may add, one other factor in the problem, apart from special situations like shipyards and linotype composing rooms, which cannot well be put on exhibition: in the ordinary course of domestic and business life the best noise eliminator is good manners.

ALLERGY AND IMMUNITY

Hypersensitiveness of some kind is being invoked more and more as an explanation for morbid phenomena. This habit or tendency is of two kinds: that of regarding a patient as being " sensitized " or " sensitive " to something without considering too closely what is meant by this description, and the more serious and reasoned doctrine that familiar processes formerly regarded as purely inflammatory are examples of " allergic reactions ": among such processes are lobar pneumonia, rheumatic fever, and glomerulonephritis. Accompanying the development of this new attitude, which is perhaps the most widespread change affecting medical thought in the past five years, there has been a prodigious misuse of terms, some of which appear to have lost irretrievably the exact significance they once possessed. It is therefore a pleasure to read a paper in which such terms are first defined, and defined with precision.

According to Martin[1] anaphylaxis is the " immediate reaction which takes place in smooth muscle when its sensitized cells come in contact with the antigen to which they are sensitized " ; allergy, on the other hand, is a " delayed reaction which follows the reception into tissues of an antigen to which they are sensitized," and is " characterized by oedema, inflammation, tissue destruction, and necrosis." These are indisputably definitions in accordance with the original meaning given to these terms by their inventors, but how often is their employment restricted within these bounds in current usage? Martin's chief concern is to prove that allergy is not a condition necessary to immunity. He quotes experimental evidence that immunization can take place without the production of allergy, and that the immune state may persist after the allergic condition has been lost. Perhaps the most convincing single experiment is that of Rich and Jennings.[2] Rabbits which had been made both allergic and immune to

[1] *Ann. Int. Med.*, 1934, xiii, 483.
[2] *Bull. Johns Hopkins Hosp.*, 1933, lii, 172.

pneumococci were desensitized by a large intravenous dose of a killed suspension. The response to intradermal injection of living cocci in these animals was then compared with that in allergic animals and in untreated controls. The controls developed a spreading infection; the allergic and immune animals exhibited a violent reaction terminating in necrosis; whereas in the desensitized animals the local reaction was slight and the injected cocci were confined to the site of inoculation. In Rich's own words, "The immune state acts to enhance so greatly the protective power of the inflammatory mechanism that much less, rather than much more, inflammation is required to protect the body from infection." This conclusion is entirely in accordance with former belief, and perhaps, it may be said, with common sense: it leaves the true allergic reaction in an anomalous position.

How much truth is there in the suggestion that some acute inflammatory reactions are manifestations of local hypersensitiveness to a specific bacterial protein? Perhaps the clearest ground on which to decide this question is that furnished by lobar pneumonia. A school of workers in America has contended for some years that pneumonia is a manifestation of allergy. One of the arguments used is that the disease is unknown in infants, because they have had no opportunity of becoming sensitized. By various procedures acute inflammatory reactions have been induced in the lungs of sensitized animals. The latest report of such experiments is that of Fried,[3] who sensitized rabbits to horse serum by repeated intraperitoneal injections, and obtained lobar consolidation with the histological features of an acute inflammation by a subsequent intratracheal injection of a small dose of the same material. The argument here is not wholly convincing, and the difficulty of explaining the phenomena of pneumonia in terms of a straightforward infection in a susceptible subject tends somewhat to be exaggerated by those who have another explanation to offer.

THE HONOURS LIST

The list of Birthday and Jubilee Honours contains many medical names, which will be found set out in full at page 1186. To Sir Frederick Gowland Hopkins, P.R.S., we owe the conception of "accessory food factors," and it is fitting that he should receive the Order of Merit for his eminent services to biochemistry and in particular for his part in the discovery of vitamins. Sir Cooper Perry is created G.C.V.O. and Sir George Newman, G.B.E., in recognition of great public work. Sir Henry Jackson receives a baronetcy for services in connexion with transport and traffic problems. Lieut.-General James Hartigan, Director-General, A.M.S., is created K.C.B., and Air Vice-Marshal John McIntyre, K.B.E., Mr. A. James Walton, Surgeon to the King's Household, and Mr. Lancelot Barrington-Ward are created K.C.V.O., and Dr. Annie Connor and Dr. Constance D'Arcy, D.B.E. Distinguished work in clinical medicine and industrial hygiene is recognized by the knighthood for Professor Arthur Hall, and in pathological and physiological research by the same honour for Dr. Patrick Laidlaw. Knighthoods are also to be conferred on Dr. John Vigers Worthington, M.P., parliamentary private secretary to the Prime Minister; on Dr. Walter Burford Johnson, director of medical and sanitary services, Nigeria; on Professor Joseph Barcroft of Cambridge, who, though not a medical man, has done exceptional work for medicine as teacher and investigator; and on Mr. Laurence Brock, who has had intimate association with our profession both at the Ministry of Health and as Chairman of the Board of Control. To these and to all the others whose public or private service at home or abroad has earned for them a place in the Jubilee medical honours list, we offer congratulations.

BRONCHIECTASIS AND ATELECTASIS

The theories as to the causation of bronchiectasis have in recent years been variously criticized, and the belief that pulmonary collapse frequently gives rise to bronchial dilatation has been gaining in popularity. In the current issue of *Archives of Diseases in Childhood* Dr. Leonard Findlay[1] advances that the view that a triangular shadow in the skiagram situated at one or other diaphragmatico-vertebral angle invariably spells collapse of the lung, has led to the supposition that there is a relation between atelectasis and bronchiectasis. This shadow may, as it is pointed out, be due to other conditions as well, such as mediastinal pleurisy, fibrosis of the lung, and pneumonia; and Findlay holds that the only criterion by which it can be decided that a particular shadow in the skiagram is caused by collapse of the lung, at least during life, is the ability to cause its rapid and complete disappearance by reinflation. This is described as the acid test, and may be applied by any means which brings about forced and deep breathing. In Findlay's cases the method generally adopted was the inhalation of carbon dioxide in oxygen. Before this interpretation of the *x*-ray appearance of pulmonary collapse can be accepted, it must be borne in mind that massive pulmonary collapse in adults never seems to produce the basal triangular shadow which is often taken to be characteristic of spontaneous pulmonary collapse in the child. On the modern view that this triangular shadow represents pulmonary collapse several cases of so-called atelectatic bronchiectasis in children have been put on record. Findlay subjects many of these to close scrutiny, and on his reinflation test the diagnosis in most of them must remain doubtful. He describes three personally observed cases of bronchiectasis with an accompanying triangular shadow in the skiagram. In all the bronchiectatic lesion was situated at the right base, was of mild degree, and was completely recovered from. Findlay supports the hypothesis that bronchial dilatation accompanying pulmonary collapse is compensatory in nature. The specific cause is the inability of the lung to fill the thoracic cavity, and hence the necessity for some space communicating with the external air (alveolus or bronchus) to dilate during inspiration. Critics of this hypothesis would hold that in such circumstances only a weakened bronchial wall

[3] *Arch. Path.*, 1934, xviii, 865.

[1] April, 1935, p. 61.

would dilate, and others that bronchiectasis in a collapsed portion of the lung can only occur when there is associated fibrosis. Since such fibrosis would prevent reinflation from being successful, Findlay would exclude such cases as being examples of collapse. The roundabout nature of the argument leads to a consideration of the evidence for bronchiectasis in these patients. This is afforded by *x*-ray pictures taken after the injection of lipiodol into the bronchus. The suggestion that bronchial dilatation illustrated in this way can be restored to normal in true atelectasis by reinflation will not be easily accepted by those whose mental picture of bronchiectasis is one of destroyed bronchial epithelium and fibrosis round the cavities. Findlay's survey of the subject is timely, and it may be that what lipiodol reveals in life is not identical with what is found post mortem. The introduction of contrast media in radiography of the lungs has complicated the whole story of bronchiectasis, and much of the confusion now existing appears to be due to unsuccessful attempts to correlate early bronchial dilatation in the living subject with the cirrhotic lung of the older pathologists. It seems clear that pulmonary collapse may be a factor in the production of the former, but possibly not as often as is frequently assumed.

ESTIMATION OF VITAMIN A

A decade ago vitamins were mysterious substances and their chemical nature was unknown. The rapid advance of chemical knowledge in this field has been one of the most remarkable recent advances of biochemistry, but the speed of the advance has resulted in a certain amount of temporary confusion as regards quantitative estimation. This is particularly true in the case of vitamin A, for there are several rival methods by which this substance can be measured, and the units in the different cases are wholly different. The Crookes Laboratories have performed a useful service in preparing a short pamphlet which explains both the different methods available for the quantitative estimation of vitamin A and the significance of the different units in which these measurements are expressed. The international unit is the amount of vitamin that produces a growth-promoting effect equal to that produced by 0.001 mg. of carotene. The weak points of this test are that it is very expensive and takes at least a month to perform, while even in skilled hands its accuracy is low and in unskilled hands the results mean nothing. The other tests are based on chemical or physical methods, and are far quicker, easier, and cheaper. The blue test is based on the intensity of colour produced by addition of antimony trichloride to the oil. Skill and experience are needed to obtain accurate results with this test. The spectrographic method measures the absorption of ultra-violet light of the wave-length 3,280 A.U. The chief difficulty about this method is the expense of the apparatus. The vitameter method is a simplified form of the spectrographic test. The biological method has only one merit, but this is outstanding—namely, that it alone provides a direct measure of the biological activity of the substance tested. The chemical and physical methods have, however, been checked carefully by the biological method, and although the presence of certain substances may cause gross errors in the results, yet enough is now known to render the results obtainable by these methods with fish-liver oils fairly reliable. Messrs. Crookes consider that the method of choice under present conditions is to estimate the vitamin content of oils by the vitameter or spectrograph and the relation between the results obtained with this method and the other units they show by the following figures:

	1 per cent. Solution Vitamin A	Ordinary Halibut-liver Oil
Vitamin A content per cent.	1	0.025
Spectrographic extinction $\left(E\,\frac{1\%}{1\,cm.}\right)$	16	10
Blue value (20% C.P.)	800	500
International biological growth units ...	25,000	16,000

The statement of the vitamin A content as a simple percentage is a very desirable simplification, because it is important for the medical profession and the public to realize that the problem of vitamin supply is a quantitative one. A mixed diet of fresh foods will usually contain the necessary amount, but when the dietetic supply is inadequate and supplementary vitamin therapy is required, the latter is useless unless an adequate quantity is given. This can only be ensured by giving preparations whose vitamin content is clearly stated. Messrs. Crookes's pamphlet indicates the great advances that have been made in the quantitative measurement of vitamins A and D, and no preparation claiming to supply these vitamins in concentrated form can be considered satisfactory unless the vitamin content is stated in recognizable units.

BARBITURATE POISONING

In a recent article on barbiturate poisoning Professor Carrière and Dr. Huriez[1] describe no fewer than eleven cases of attempted suicide seen during 1934 in Lille, and speak of the epidemic of barbiturate suicides that is afflicting France. Of the eleven cases, eight were due to phenobarbitone, and three had a fatal termination. The doses taken ranged from 1.7 to 7 grams. One person survived 5 grams, and the two lethal doses that were ascertained were 6 and 7 grams. The usual antidotal treatment adopted was a combination of strychnine, coramine, and alcohol. All these drugs were given hourly: strychnine 0.01 gram hypodermically up to a total of 0.3 gram; coramine 3 c.cm. up to a total of 50 c.cm.; and 20 c.cm. of 33 per cent. alcohol up to a total of 150 c.cm. The authors stress the importance in severe cases of cardiac irregularities, revealed by the electrocardiograph. In general they are reserved in regard to the value of strychnine therapy; they suspect it of having an unfavourable action on the heart, and recommend caution in its use. They find coramine to be of somewhat greater value, but do not find it a true antagonist. The same applies to intravenous alcohol, though in their experience this treatment is of considerable value. The authors point out the dominant importance of early evacuation of the stomach, and are convinced of the great value of

[1] *Presse Méd.*, March 23rd, 1935, p. 465.

active antidotal treatment on the lines indicated above. In view of the extensive experience of the authors this critical review of the symptoms and treatment of barbiturate poisoning is of much interest.

THE STRAND STATUES

When the British Medical Association ten years ago sold its premises in the Strand and came to Bloomsbury, it ceased to have any proprietary interest in the building which Mr. Charles Holden designed for it in 1907, with sculptures by Mr. Jacob Epstein. The Dominion Government of New Zealand, to whom the building was sold, afterwards disposed of it to the Government of Southern Rhodesia, and (as every newspaper reader is aware) the latter now proposes to remove the statues which form an integral part of the architect's design. Much concern has been expressed by artists and authorities on art at this proposal on the ground (*a*) that the building "should be preserved intact with its nobly planned and executed sculptural decoration"; and (*b*) that "it would in all probability be impossible to cut out the eighteen beautifully carved statues without destroying them." Thus, once again, the Strand statues have become a subject of public controversy. It took Mr. Epstein fourteen months to carve the figures from blocks of Portland stone already in position on the half-finished building. Each was roughly shaped by one of his two assistants from full-size plaster casts, and they were then (in the words of a writer in the *Manchester Guardian* of May 27th, 1935) "carved to life by the sculptor." A series of statues illustrating medical history had been favoured at first by the Council of the Association; but Mr. Epstein, with the architect's full support, got leave to substitute for this "a free decorative conception of figure designs, imaginatively expressive of spiritual and physical energy," and representing symbolically "life, its origin and growth." The artist himself wrote in our columns, "Apart from my desire to decorate a beautiful building, I have wished to create noble and heroic forms to express in sculpture the great primal facts of man and woman." When the statues began to appear, virgin white, from behind the hoarding which concealed the third story, a reporter walking along Agar Street looked up and smelt "copy." In a few hours the Strand statues had become a sensation. The *Evening Standard and St. James's Gazette*, with a fine air of moral wrath, called upon the Council of the B.M.A. to remove these indecent images, pointing the finger of outraged virtue at their details. For several weeks every errand boy in the neighbourhood of Charing Cross got a stiff neck from his efforts to verify the allegations. The *Times* in a leading article on June 24th, 1908, when the commotion was at its height, confessed surprise at "any portion of the London press assuming the moral attitude of the Pope who ordered the Vatican Venus and some of her marble sisters to wear tin petticoats." The *British Medical Journal* three days later had an annotation headed "An Old Maid with a Spyglass," suggesting that the whole outcry against Mr. Epstein's figures was nothing more than a cleverly engineered journalistic scoop. "We are glad to be able to state that after full consideration the Building Committee has decided to recommend the Council to leave the statues as they are." Our issue of the following week contained a series of opinions from leading authorities on art, all protesting against the foolish and mischievous agitation. It is amusing to-day to recall that among the simple-hearted supporters of the *Evening Standard* campaign in 1908 was a gentleman named Walter Reynolds, whose recent melodrama *Young England* has not been taken quite as seriously as he expected. So the tumult died down and the sculptor proceeded with his statues. We hope they will stay where they are.

SIR FREDERICK BANTING

At a court dinner of the Society of Apothecaries of London, held in the Hall of the Society on June 4th, Sir Frederick Grant Banting, F.R.S., professor of medical research in the University of Toronto, was presented with the Society's gold medal in therapeutics. Introducing Sir Frederick Banting, Sir William Willcox, the senior warden, said that the medal was the greatest honour the Society could bestow, and Sir Frederick was one of the most distinguished research workers in the world. The discovery of insulin in 1922—one of the greatest in modern times—was no chance discovery. It was a triumph of patient spade work in physiology. Among previous recipients of the Society's medal had been Professor W. E. Dixon, Sir F. Gowland Hopkins, Professor J. J. Abel, Professor Fourneau, and Sir Henry Dale. In its selection of Sir Frederick Banting, Sir William said, the Society could not have made a better choice for the 1934 gold medal. "On behalf of all those associated with the early work on insulin I thank you," was the gracious and modest way in which Sir Frederick Banting acknowledged the presentation. The medal was, he said, a symbol of the ties which bound Canadian medicine with the old land. There was need of such ties in Canada, where they were subject to two attractive forces—the U.S.A. and Great Britain. This year the Canadian and the American Medical Associations were meeting together at Atlantic City. In America the young Canadian had open to him research laboratories backed up with unbounded wealth. In one year 45 per cent. of the graduates of the University of Toronto "were drawn across the line." Even as the Scots went to England, so the Canadians went to America, as had Osler, McCrae, and McCollum. But their bonds with the British Empire were stronger than those with America. They were doing their best in Canada to stimulate young Canadians to come to England. "We wish to become more British," said Sir Frederick, and he asked that young Canadians should be welcomed here, for it was only when Canadians came to Britain that their sentiments of kinship became strengthened. The great thing about British medicine, he continued, was that it was built on solid foundations. It was no mushroom growth. The progress of medicine in this country had not been inhibited by tradition, which stimulated progress. The Canadian went back home taking with him some of those traditions and high ideals which would guide the man in a country whose traditions were just beginning to be formed.

DENTAL CARIES

During 1934 Dr. Gerald J. Cox and Miss Mary L. Dodds, holding Fellowships at the Mellon Institute of Industrial Research, conducted some studies on the fundamental causes of tooth decay. In their preliminary studies these workers observed a new type of experimental dental caries in rats that seems to be related to the diet of the nursing mother at the time of the formation of the enamel in the young. The appearance and location of the initial lesions indicate that the decay was not caused by fracture arising from coarse particles of food. As the lesions first appeared as opaque areas and later became open cavities, they were described as closely resembling typical enamel caries in the human subject ; it was therefore concluded that they probably arise by the same process in both species. Inasmuch as susceptibility to tooth decay in the rat appeared to be connected with the diet during tooth formation, Dr. Cox and Miss Dodds made modifications of the maternal diet to determine whether the incidence of caries could be controlled. They found that caries appeared on diets made up with all the essential constituents at present recognized ; but when such diets were supplemented with certain milk fractions, or with milk itself, they observed that the incidence of caries was markedly reduced. These experimental results, which suggest the existence of a factor in food which plays a part in the formation of decay-resistant teeth, were recently summarized in Dr. Weidlein's twenty-second annual report to the trustees of Mellon Institute. Further investigations into the nature of this factor are in progress.

PULMONARY EMBOLISM

Few incidents in medicine are so dramatic as death following pulmonary embolism. Occurring like a bolt from the blue in a person in good health after a successfully performed operation, it is perhaps the most distressing operative complication for the surgeon, who until very recently was compelled to witness his patient's death within seconds or minutes without having any effective help to offer. Therefore, and particularly in view of the attempts made of late to deal with the condition surgically, the experimental study of Villaret, Justin-Besançon, and Bardin, a preliminary note[1] on which has just been published, is of more than theoretical interest. Their work was prompted by appreciation of the lack of accord sometimes seen between the clinical picture and the morbid anatomical findings: for instance, the sudden death caused by emboli of medium size only, the serious import of capillary emboli, and the fact that even large obstructions of the pulmonary artery were not necessarily rapidly fatal. In their experiments the emboli were caused by inserting various foreign bodies in the right external jugular vein. The most appropriate foreign bodies they found to be powdered pumice-stone (with a definite weight per kilo of animal, and in particles of a definite size as tested by a sieve) for producing capillary emboli, and porcelain shot ("perles"), containing no lead, to represent emboli of "average size." Full details of the technique are given, and reference is made to the importance of the difficulties associated with local or general anaesthesia. Forty-five animals received porcelain shot. One died on the operating table, and at the post-mortem examination the fifty shot were all found in the pulmonary artery: there were no infarcts in the lungs, but the liver and spleen were much enlarged and congested. In none of the other animals did death occur within a few minutes or even hours. One, with a hundred "perles" as big as the diameter of the external jugular vein permitted, lived three days ; another, with ten "perles," lived for a month, although the pulmonary arteries were obstructed nearly beyond the hilum. On the other hand, although a watery suspension of powdered pumice-stone of a certain size did not even cause sudden dyspnoea, when the particles reached a greater degree of fineness there was intense dyspnoea, and lightning emboli soon followed. From these experiments the authors conclude that death is due to a reflex phenomenon determined by the impact of the fine particles on the nerve endings in the pulmonary arterial bed, and they stress the importance of their work in indicating the size of particles needed to give the adequate stimulus. The authors promise to discuss in a later report the application of their findings to man.

[1] *Ann. de Méd.*, 1935, xxxvii, 305.

HICKMAN MEDAL

The Council of the Royal Society of Medicine on May 21st unanimously decided (on the recommendation of the Council of the Anaesthetic Section) to make the first award of the Hickman medal to Dr. Wesley Bourne of Montreal, who is well known to anaesthetists in this country by reason of his many researches into the physiology and pharmacology of anaesthesia. Dr. Wesley Bourne is not only anaesthetist to the Royal Victoria Hospital, Montreal, but also a lecturer in pharmacology at McGill University, and he took his degree of Master of Science in anaesthetics.

RESEARCH DEFENCE SOCIETY

The annual general meeting of the Research Defence Society will be held at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C., on Wednesday, June 12th, at 3 p.m., when Sir Frederick T. G. Hobday, C.M.G., F.R.C.V.S., will deliver the ninth Stephen Paget Memorial Lecture on "The Relief of Animal Suffering." The chair will be taken by the president, Lord Lamington, supported by Sir Arthur Stanley, chairman of committee, and Professor A. V. Hill, F.R.S., vice-chairman of committee.

On the nomination of the Victorian Branch, the Council of the British Medical Association at its meeting on June 5th appointed Lieut.-Colonel Sir James W. Barrett, K.B.E., C.B., C.M.G., LL.D., F.R.C.S., as President-Elect for the year 1935–6 in the place of Sir Richard Stawell, who died on April 18th, and who was to have presided over the Annual Meeting in Melbourne next September. Sir James Barrett is Vice-Chancellor of Melbourne University, and consulting surgeon to the Victoria Eye and Ear Hospital.

TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some of the major medical disorders met with in general practice.

CARDIO-AORTIC SYPHILIS

BY

D. EVAN BEDFORD, M.D., F.R.C.P.

The clinical manifestations of cardio-aortic syphilis usually appear between fifteen and thirty years after the primary infection. In its early stages aortitis is a silent lesion, and by the time it declares itself permanent damage to the heart has generally occurred. To appreciate the possibilities of antisyphilitic treatment in aortitis it is necessary to understand correctly the pathology of syphilitic heart disease.

Syphilis invades the aorta from without, permeating the media and weakening the aortic wall. This commonly results in general dilatation of the aortic lumen, sometimes complicated by saccular aneurysm. The syphilitic process is concentrated in the proximal aorta, where it is prone to involve the aortic cusps and the coronary openings. Two serious complications result: aortic incompetence and stenosis of the coronary ostia. The syphilitic process is confined to the aorta and its valves; syphilitic inflammation of the heart muscle or of the coronary arteries beyond the aorta is scarcely ever observed at necropsy. The changes found in the heart itself consist of hypertrophy and dilatation and often ischaemic fibrosis, and are accounted for by aortic regurgitation and coronary stenosis. Thus heart failure and severe angina pectoris in syphilitic heart disease must be attributed, not to inflammation of the heart itself, but to the late mechanical results of aortitis, which increase the work of the heart and at the same time diminish its blood supply.

Antisyphilitic treatment is without effect on these mechanical end-results of aortitis once they have appeared, though it may check their further progress and cause resolution of syphilitic inflammation in the aortic wall. The benefit to be derived from antisyphilitic remedies will depend, therefore, on how far the function of the myocardium is already impaired by aortic incompetence or coronary stenosis at the time treatment is started.

General Treatment

Rest is the most essential measure in treatment. Its purpose is, first, to minimize the work of the heart, and, secondly, to prevent further dilatation of the aorta by keeping the blood pressure as low as possible. Rest is especially important at the beginning of treatment, when the syphilitic inflammation is reacting to trypanocidal drugs. A minimum period of six weeks should be spent in bed while treatment is first instituted, and this rest must be extended if symptoms persist or if the heart is badly damaged.

Manual work and acts involving physical strain should be forbidden in any form of syphilitic heart disease. Patients with aneurysm, severe angina pectoris, or congestive heart failure will require long periods of rest, and physical exertion should be permanently restricted to walking slowly on the level. Moderation in food, tobacco, and alcohol is also important.

Antisyphilitic Treatment Dangers

If arsenic is given to an untreated case of syphilitic heart disease it is occasionally followed by a sudden aggravation of the symptoms, attributed to a focal reaction in the aorta (Herxheimer reaction). In the same circumstances, a temporary general improvement may be followed by aggravation of the heart condition or by heart failure ("therapeutic paradox"). This is attributed to the weakening effect of rapid resolution of syphilitic inflammation in the aorta and valves.

These dangers can best be avoided by always preceding arsenic with a preliminary course of mercury. It is well to bear in mind that arteriosclerosis, hypertension, and renal disease are not infrequently associated with syphilitic lesions in elderly subjects, and the general condition of the patient should be investigated. Severe reactions are undesirable in patients with heart disease, and any symptoms of intolerance to arsenic should contraindicate its further use.

Principles of Treatment

The benefit derived from antisyphilitic drugs will depend on the stage of the disease when treatment is started. Where the myocardium is still intact, a vigorous attack on the spirochaetes may preserve its integrity, and the most potent remedies we possess are justifiable. But where the heart muscle is already crippled by permanent mechanical faults, curing the syphilis can help it little, and milder remedies are indicated.

As a general rule, a rest in bed for at least six weeks should be ordered at the start of treatment, and this should be prolonged if the symptoms persist. A rigid routine method is less applicable to cardiovascular than to other forms of syphilis, and the reaction to treatment should be carefully watched in every case. The following plan is intended as a guide, and will often require modification.

AORTITIS WITHOUT INCOMPETENCE OR CARDIAC ENLARGEMENT

Mercury and iodide are given for two months. They may be taken by mouth as follows:

℞ Liq. hydrarg. perchlor. ... ... ℥ j
Pot. iod. ... ... gr. x
Spt. chlorof. ... ... ♏ v
Infus. gent. co. ... ... ad ℥ ss

The dose is prescribed twice daily at the beginning and increased to thrice daily if well tolerated. It is often more convenient to give mercury in pill form as follows:

℞ Hydrarg. cum cret. } āā ... ... gr. j
Pulv. ipecac. co. }

The pill is given twice daily. Some consider mercurial injections more efficacious, and 1 grain of metallic mercury in the form of grey oil or mercurial cream may be injected intramuscularly into the buttocks once weekly for twelve weeks. During this treatment attention should be paid to the teeth and gums. If the patient is free from symptoms a course of arsenic should follow, and is best prescribed in the form of intravenous injections of neoarsphenamine (N.A.B.). The initial dose should be 0.2 gram, and this is increased up to but not exceeding

0.6 gram ; ten weekly injections constitute a course. The usual preparation is required before an injection. No food should be taken for six hours beforehand, unless 1/2 oz. of glucose be given ; alcohol is forbidden. The patient is best kept in bed for the first doses of arsenic, and should in any case be instructed to rest for several hours after the injection, which may conveniently be administered in the evening.

Arsenic should be stopped if there are any signs of intolerance or if it appears to react unfavourably on the heart condition. If arsenic is not tolerated, or if it is contraindicated by the general condition, bismuth may be prescribed in its place. Bismuth is administered by intramuscular injection, either of the metal itself in suitable suspension, or of a salt or compound. The dose of metallic bismuth (bismostab, hypoloid bismuth metal) should be 0.2 gram, weekly for ten to twelve weeks. Alternatively, quinine iodo-bismuthate may be used, 3 c.cm. of a 10 per cent. oily suspension being injected weekly for a similar period.

Antisyphilitic treatment should be continued for at least two years, and should not be stopped or modified on account of a negative Wassermann reaction. A course of arsenic or bismuth may be repeated at intervals of six months, and between such courses mercury and iodide is taken. A few weeks' rest from mercury is advisable every two months. Even after the completion of two years' treatment, an occasional course of mercury is a wise precaution.

AORTITIS WITH AORTIC INCOMPETENCE

Here the intensity of treatment should depend on the degree of enlargement of the heart and on the severity of the symptoms. If the heart is little enlarged and the symptoms are slight, treatment should be the same as for simple aortitis, though the preliminary course of iodide and mercury should be prolonged to three months. Considerable cardiac enlargement, or symptoms of moderate severity, should contraindicate arsenic. Bismuth may be given instead, but the results should be watched carefully.

SYPHILITIC CONGESTIVE HEART FAILURE

Rest and treatment of the heart should precede antisyphilitic drugs. Ordinary measures such as restriction of fluids and salt, and digitalis in adequate doses (for example, 2 grains of powdered leaf or 20 minims of tincture, thrice daily), are employed. Where there is much oedema intravenous injections of salyrgan are valuable ; an initial dose of 1 c.cm. is followed at intervals of four days by 2 c.cm. Once failure is controlled, mercury and iodide are taken by mouth, starting with half the doses mentioned in the case of simple aortitis. The expectation of life in syphilitic heart failure is not more than a year, and more vigorous antisyphilitic measures are not likely to improve the patient. If unexpected improvement results from treatment, a course of bismuth may be prescribed cautiously, but arsenic is contraindicated.

SYPHILITIC ANGINA PECTORIS

Angina of effort which is relieved by rest in bed may be treated in the same way as cases with aortic incompetence. Arsenic is not absolutely contraindicated where the heart appears but slightly damaged, but it should only be given to those cases that react well to preliminary treatment. Severe anginal attacks which continue when the patient is confined to bed point to coronary stenosis. In such the prognosis is extremely bad, and antisyphilitic treatment should be confined to mercury and iodide. Prolonged rest in bed and measures to relieve the pain are indicated. Trinitrin tablets, 1/100 grain, may be taken freely, but opium is often required, and may be ordered in the form of nepenthe or tincture of opium in doses of 20 minims. An injection of morphine should never be withheld when the pain does not rapidly subside. Surgical treatment, such as cervical sympathectomy or total thyroidectomy, advocated for intractable cases of angina, can scarcely be justified in syphilitic coronary stenosis.

SACCULAR ANEURYSM

Aneursym has no direct effect on the heart unless it involves the aortic orifice and causes incompetence of the valves. Apart from pressure symptoms, a small aneurysm need not modify the ordinary antisyphilitic measures, which should be adapted to the condition of the heart, as already indicated. Aneurysm is an additional reason for a rigid restriction of physical exertion. Serious pressure symptoms or haemoptysis are indications for rest in bed and sedatives, and antisyphilitic measures should be limited to mercury and iodide by mouth. When a bronchus is compressed, iodide is not always well tolerated.

Results of Treatment

The best results are obtained when treatment is started before the occurrence of aortic incompetence, while the heart is still unaffected. Relief of symptoms is the rule and life is prolonged. It is only in this type of case that anything approaching a clinical cure can be expected. Even continuous treatment cannot, however, always prevent aortic incompetence developing once the aortic wall is damaged. When aortic incompetence is already present the results of treatment are far less satisfactory and are more difficult to assess. In some cases there is obvious clinical improvement ; in others little change is observed ; but evidence is accumulating that life is often prolonged by treatment.

Rest undoubtedly influences the course of the heart disease favourably, and much will depend on how far the patient is able and willing to submit to the necessary restriction of his activities. In a small proportion of cases antisyphilitic treatment appears to do harm, but this often implies the use of too vigorous methods. Once the coronary orifices are seriously stenosed, so that the blood supply to the heart is permanently reduced, all that can be hoped for is to diminish the severity of the symptoms by prolonged rest in bed and sedatives. This applies to most patients with severe anginal attacks at rest, or with cardiac asthma.

According to M. Ghendler (*Thèse de Paris*, 1935, No. 101), before the great war typhus fever was not endemic in Rumania. In the decennium 1905 to 1914 the annual number of cases ranged from 0 in 1908, 1912, and 1914, to 111 in 1911. In spite of the epidemic prevalence of the disease in Serbia and Russia only forty cases occurred in Rumania during the first three months of 1915, but after the entrance of Rumania into the war in August, 1916, the crowding, promiscuity, and lack of hygiene prepared the ground for the virus, which was introduced by the Russian troops. In January, 1917, a great epidemic broke out, first among the soldiers and then in the civil population. There were about 100,000 deaths, including 350 out of 1,500 doctors mobilized. The campaign against the disease was rendered difficult by lack of hospital accommodation and the coexistence of relapsing fever. As the result, however, of extensive disinfestation the epidemic was almost stamped out by January, 1918, but the return of prisoners and the reflux of refugees from the Ukraine, where typhus was prevalent, caused a fresh outbreak, though on a smaller scale, and since then the disease has been in endemics in Rumania. The fatality rate, however, has fallen from an average of 20 per cent. during epidemic times to 10 per cent. Most of the cases at the present time occur in Bessarabia, then in that part of Moldavia bordering on Bukovina, and lastly in Bukovina itself. Ghendler attributes the persistence of typhus in Rumania to the presence of clinically non-apparent forms.

LISTER INSTITUTE REPORT

The forty-first annual report of the Lister Institute of Preventive Medicine, dated May 21st, 1935, reviews the scientific work carried out by the Institute during the past year. In the introduction the governing body mentions the deaths of Sir James Kingston Fowler, who served on the governing body from 1918 to 1931; Professor Georges Dreyer; and Sir John Rose Bradford. Of the staff Dr. A. Felix has spent two months in Palestine investigating the properties of a new anti-typhoid serum, and Dr. C. R. Amies has continued his work under the auspices of the British Empire Cancer Campaign. Appreciation is recorded of the co-operation with the Medical Research Council enjoyed by the Institute, and gratitude is expressed to the Rockefeller Foundation, which has made a grant of £3,400 to the Institute for the purchase of a velocity and an equilibrium centrifuge for researches on serum proteins. Foreign guests during the year include Professor Ellinger, Miss E. Klieneberger, and Dr. Gutstein of Berlin. Cultures of bacteria and micro-fungi have been distributed to various workers to the extent of 5,000 during the current year, and 200 new strains were deposited for maintenance in the National Collection of Type Cultures. A number of wood-destroying fungi have been listed in the collection through arrangements with the Forest Products Research Laboratory, Princes Risborough. Below is given a brief summary of the scientific investigations which have been made during the year.

Virus Studies

Dr. G. H. Eagles, continuing his successful passage of vaccinia virus in a cell-free medium, concludes that the virus may, "under conditions which cannot at present be controlled at will," be cultivated in the absence of viable cells. Further work concerns the possibility of using elementary body suspensions as a substitute for ordinary vaccine lymph. Deposits of these bodies from dermal lapine, reconstituted, were found, when suspended in plain broth, to be highly active after four hundred days in the cold. These suspensions have the advantage of bacteriological sterility, and represent the virus in the purest form available. No human vaccination has been made with them as yet. Dr. A. B. Sabin has continued his study of the "B virus" from acute ascending myelitis: it is thought to have a partial relationship with herpes and pseudo-rabies, but none with vaccinia. Another investigation by Dr. E. W. Hurst concerns equine encephalomyelitis.

Dr. Eagles, in collaboration with the Danish State Serum Institute, has been studying the neutralizing value of samples of serum from Danish cases of poliomyelitis at different periods following recovery from the disease. It is thought that, when completed, conclusions from this work will be of considerable interest and value. Dr. Amies has been examining acute rheumatism in children with a view to the possibility of this disease being due to a virus. Dr. Klieneberger has been investigating symbionts in association with bacterial cultures: these are pleuropneumonia-like organisms, and it is suggested that polymorphic elements, considered by some observers as belonging to sexual phases of the bacteria, may prove to be symbionts contaminating the cultures.

Serological Studies

These have been concerned with *B. pestis* and its envelope antigen; the Pasteurella group; and *C. oedematis maligni*, in connexion with the mechanism of protection against experimental infection in guinea-pigs. A massive polynuclear response, together with clumping and direct lysis of the latter organism, was noted in the protected animals, and was followed by dense granulation tissue and complete healing within fourteen days. Other work has been done on the prophylaxis of *C. tetani* infection and the "Vi" antigen of *B. typhosus* and its use in active and passive immunization of mice. Experiments have indicated that the efficacy of a therapeutic anti-typhoid serum would depend on the presence in it of both the "Vi" and the "O" antibodies. This is the type of serum which Dr. Felix has had the opportunity of testing on a number of typhoid patients in Palestine. Results of clinical trials on forty-three patients with seventeen control cases have been definitely encouraging. Two practical conclusions arising out of this work are that: (1) prevention of infection with the commonest type of *B. typhosus* must involve the use of "Vi" antigen, and (2) in treatment of the commonest type of case the anti-typhoid serum must contain "Vi" antibody. In connexion with this it was found that only eleven out of 113 patients and convalescents tested for the presence of "Vi" antibody actually possessed it.

Dr. Gutstein is continuing his studies on the Gram-positive and Gram-negative group of micro-organisms, experiments having suggested that the former possess a more active cell-content than the latter. An attempt is being made to test this hypothesis by observing the varying ability of trypsin and pepsin to suppress growth of the two groups of organisms. Dr. A. S. McFarlane, who has been working with Svedberg on the physical nature of ultra-microscopic particles, has brought to light certain phenomena relating to the state of the proteins in untreated serum in health and disease which open up new possibilities in diagnosis and prognosis. It has been found, incidentally, that urinary proteins in nephritis are not always identical with serum proteins. Special apparatus for centrifugalization is being supplied to the Institute for use in this work.

Endocrinology

Dr. V. Korenchevsky and others have been working on the effects on male rats of adrenalectomy and of testicular hormone and oestrin administration. For the male sexual hormone two different kinds of rat unit have been suggested: (1) the comb-growth promoting factor, and (2) the "whole male sexual activity." Androsteron, the synthetic testicular hormone prepared by Ruzicka, contains one of each rat unit in about 170γ, the rat unit approximating to the capon unit. Details are given of the changes obtained with prolonged injection of androsteron as regards increase or decrease in the weight of various organs. Information was also obtained as to the effects of oestrin with and without testicular hormone. Experiments in adrenalectomy in rats suggested *inter alia* that the cortical hormone may have an anabolic function on the metabolism as well as an appetite-producing property. Dr. P. Ellinger has continued his studies of intravital microscopy by direct photography of the living tissue. Results suggest a new theory of urine production which may reconcile the antagonistic theories of Ludwig and Cushny and of Bowman and Heidenhain respectively.

Vitamin Standards and Units

During the year under review a great deal of time was devoted by the Division on Nutrition to studies connected with the second International Conference on Vitamin Standardization, held in London in June, 1934. Miss Hume and Dr. Harriette Chick are collecting results for publication in a special report of the Medical Research Council, while the British Pharmacopoeia Commission has appointed a committee to consider the desirability of adding various vitamin preparations to the *Pharmacopoeia* and drawing up appropriate descriptive monographs. Dr. Chick and Miss Hume are serving on this committee. Work on vitamin A has again included a search for a carotene solvent which will remain stable for a considerable time.

As regards the vitamin B complex, "B_2," formerly regarded as a single entity, seems now to consist of two substances: (1) a heat-stable lyochrome pigment (lactoflavin in milk or hepatoflavin in liver), and (2) a water-soluble, heat- and alkali-stable supplementary substance which occurs in yeast extract. The effects of these constituents have been studied separately. Work has been carried out on vitamin B_4, the heat-labile dietary factor described by Reader. Results did not provide any evidence of the existence of an antineuritic vitamin "B_4" apart from vitamin B_1. Further investigations have been made on the biological value of proteins by the balance-sheet method and on the biological value of fats. Dr. S. Zilva has been studying the urinary secretion of ascorbic and dehydroascorbic acids in man. The same observer has investigated the physiological changes in the apple in connexion with its vitamin C content. It has now been shown

that the concentration of this vitamin, which had been found to be higher near the skin of the apple as compared with other parts, is even higher in portions where the skin shows a marked red flush. The red skin of Bramley's seedling has been proved to contain about forty international units, an amount which thus places it with the Alphonso mango, the paprika, and the anterior lobe of the pituitary gland among the richest natural sources of vitamin C so far known. Mention is also made of the use of synthetic vitamin (ascorbic acid) as an addition to vegetables before canning.

The phosphoric esters of the blood, the deposition of strontium salts in hypertrophic cartilage, the development of the calcifying mechanism and the phosphohexokinase of bone, alcoholic fermentation, the metabolism of galactose, the chemical nature of antibodies (particularly as regards the globulin fraction of antityphoid serum), and the oxytocic hormone of the pituitary gland are among some of the subjects of study dealt with by the biochemical department.

THERAPEUTIC SERA

In a study of the endotoxin of the meningococcus attempts to obtain evidence of successful neutralization by immune sera consistently failed, and it appears from intracerebral inoculation experiments that the intracellular lethal substance of the meningococcus is not a specific antigen capable of producing an anti-endotoxin in experimental animals. Further experiments showed that failure to obtain this neutralization was due to the lack of a specific neutralizing antibody, and incidentally demonstrated the remarkable efficiency of the neutralizing mechanism when other neurotoxins, such as diphtheria and tetanus toxin and scorpion venom, were tested. An attempt is being made in the study of *C. diphtheriae* to discover whether the addition of an antibacterial element reinforces the therapeutic action of diphtheria antitoxin, and, if so, whether the result is specifically related to the strain of the bacillus employed in immunization—gravis, intermediate, and mitis. The study of the antigenic nature of the specific polysaccharide of Shiga's bacillus indicates that the purified substance given intravenously to rabbits does in fact induce the production of specific agglutinins of low titre.

Dr. Morgan is examining the possibilities of globulin solution prepared from healthy placentae and used as an antiviral agent for measles. The same observer has been studying the chemical nature of the heterophile antigen of Shiga's bacillus, while the work of Dr. McClean in adopting a different technique in preparation has shown that an efficient immunizing agent can be obtained which will, it is hoped, reduce in practice the incidence and severity of local reactions which may follow the injection of staphylococcal toxoid. A satisfactory degree of accuracy can be obtained in standardizing staphylococcal antitoxin. Tissue permeability has formed another study for this worker.

The Hygiene Department of the Royal Army Medical College, London, reports (*Journ. of R.A.M.C.*, February, 1935, p. 92) a series of experiments which appear to show that cooking as ordinarily practised in the Army renders cysticercus-infested pork sausages, ham, leg of pork, and pork chops safe for human consumption, assuming the lethal temperature for this parasite to be 49° C. or 52.8° C., as stated by Ostertag and Chandler respectively. If, however, Kenwood and Kerr are right in believing that the lethal temperature is 65.5° C., cooking in the Army way is still effective for all these foods except the sausage, which, being unpricked, bursts at this higher temperature. It seems to the authors, however, to be hardly feasible that the cysticercus could survive after body protoplasm had been coagulated (56° C.), and certainly not after egg albumen had coagulated (62° C.). The forms of cooking with the largest margin of safety appear to be baking, roasting, and frying (in the case of chops), since in all of these a temperature above blood serum coagulation point (75° C.) was reached. The authors remark that the soldier's well-known preference for overcooked food, so often adversely commented upon by civilian cooks, appears to be a wise, though doubtless unpremeditated, safeguard against cysticercosis when serving in the Tropics.

KING EDWARD'S HOSPITAL FUND

A JUBILEE DISTRIBUTION

The annual meeting this year of the President and General Council of King Edward's Hospital Fund for London on May 28th was remarkable for the announcement of a proposed Silver Jubilee distribution. The Prince of Wales, who occupied the chair as president, read a resolution of congratulation dispatched on behalf of the Fund to the King on the occasion of his Silver Jubilee and the King's reply, after which he mentioned at once the step contemplated, and subsequently approved, by the Fund to celebrate the Silver Jubilee by making an additional distribution in aid of building schemes at London hospitals. The Prince said that such an action would be particularly appropriate in view of the facts that the Fund had been originally founded to commemorate the Diamond Jubilee of Queen Victoria in 1897, that it had been augmented by the Coronation gift to King Edward in 1902, and that its last special appeal had been for the Thank-offering Fund for the recovery of King George in 1929. The King had been president of the Fund for nine years, and since his accession had taken an active interest in it as its patron.

During the twenty-five years of the King's reign the ordinary annual distribution of the Fund had been increased from £150,000 to £300,000, and each year had seen a small margin retained for reserve. In 1920 there had been an emergency distribution of £250,000 from this reserve, and at the present date it amounted to about £109,000, to which might well be added £11,000 accruing from the rental of the seats for the two Royal Processions of May 6th and 9th. This total of £120,000 would be distributed in the autumn among the London hospitals in aid of programmes of capital expenditure already notified to the Distribution Committee, together with further sums which might be received in connexion with the Jubilee. The income of the Fund for 1934 had exceeded the total distribution (£320,000) by the narrow margin of £426. The Out-patient Arrangements Committee of the Fund had issued a report on the time-saving methods in vogue in connexion with the supply by hospital dispensaries of medicines to out-patients. The Fund had co-operated with the British Hospitals Association in supporting an amendment to the Road Traffic Act of 1934, which would provide payment to hospitals for the emergency treatment of motor accident cases, and also in preparing the Voluntary Hospitals (Paying Patients) Bill, which was at present before Parliament. The Propaganda Committee had continued its usual activities with success. The Bank of England had asked the Fund to deal with appeals received by the Bank from hospitals, and had paid to the Fund the first of seven annual contributions which it had been undertaken to make. The sum included the Bank's usual annual subscription to the Fund, and certain others which had previously been handed over directly to hospitals. The amount thus entrusted to the Fund represented an increase upon the average annual total sum hitherto dispensed by the Bank in annual donations. These grants would be allocated by the Fund in the autumn just before its ordinary distribution, and would be kept distinct from the usual grants of the Fund.

The Prince paid tribute to the services rendered by members of the Fund who had died during 1934, including Sir John Rose Bradford and Lord Somerleyton, the senior honorary secretary, who had taken an active part in the work of the Fund since its foundation in 1897 until his death. New appointments included those of Dr. H. Letheby Tidy as a member of the council of the Fund, Lord Macmillan as chairman of the Parliamentary Committee in succession to the late Mr. J. H. Whitley, and Dr. Morley Fletcher as chairman of the Out-patient Arrangements Committee in the place of Sir John Rose Bradford. Moving the adoption of the accounts for the past year, Sir Edward Peacock said that annual subscriptions had risen by £200 over the 1933 figure, and donations by £1,000. Legacies had amounted to £77,000. He would be glad to see a larger proportion of the increased distribution provided by annual subscriptions, and he recalled the benefit to the Fund which was derivable from seven-year agreements, which enabled income tax and surtax to be saved. The year 1934 represented the last of the seven years during which grants in aid of pensions had been promised;

it was thought that no further grants should be made beyond a balance of £5,000 due in the coming autumn, since the pension scheme had become established in the country as part of the ordinary expenditure of the hospitals. This scheme had now been adopted by 121 of the hospitals in the King's Fund area of distribution. Last December the Management Committee had recommended the distribution of a sum of £2,000 (in addition to the ordinary distribution) for the assistance of district nursing work in relief of out-patient departments, and hospitals had accordingly been asked to arrange for records of cases thus benefited to be kept.

The annual pay-beds leaflet published by the Fund showed that at the end of 1934 there were in London 1,871 of these beds at 107 hospitals, at weekly charges ranging from two guineas a week upwards, amounting to 10 per cent. of the total beds available. The income figures of the voluntary hospitals in London for 1934 were not yet finally tabulated, but it was clear that they would show a net aggregate balance of income over expenditure. The ordinary income of London hospitals had risen in 1933 to the record figure of £3,494,000, an increase of £16,000 over the 1932 total, and the number of hospitals with surpluses was the highest yet recorded. The net aggregate surplus (£242,000) was the largest for ten years. The total income had in 1933 for the first time passed the figure of four million pounds, the receipts from patients amounting to no less than £1,203,000, including about £365,000 from the Hospital Saving Association.

MIDDLESEX HOSPITAL RECONSTRUCTED

NOTABLE BENEFACTIONS

"The greatest philanthropic adventure of the reign" is the description given by the Duke of Northumberland, its new president, to the reconstructed Middlesex Hospital, which was opened by the Duke of York last week. A short account of the opening ceremony appeared in our last issue (page 1151). To rebuild the Middlesex has cost £1,125,000, all of which has now been provided. Some very large donations have been received, the largest being an anonymous gift of £300,000. The institution therefore enters upon this new chapter of its history free from debt.

The notice, "Middlesex Hospital is falling down," which stared at Londoners from the hoardings ten years ago, was, if not quite literally, rather more than metaphorically true, as a dangerous structure notice had been served. What looked like a calamity, however, is now seen to have been a blessing. The passing of the old building, which seemed tragic at the time, was in fact opportune, because, in the words of Prince Arthur of Connaught at the opening, if the building had remained it might have cramped the growth and killed the promise of those developments which the new building can embody, especially the new spirit of collaboration between scientists and clinicians. The hospital was fortunate in having men at its head who had vision to plan and a striking assembly of princely donors who came under its spell. It was resolved not to tinker with, but to rebuild the whole hospital, and this was done without even the temporary sacrifice of a patient's bed. A building in the adjoining Cleveland Street was acquired as an annexe, and the hospital was pulled down and re-erected wing by wing. Even after the plans for rebuilding had actually been put into operation some revisions on larger and more daring lines were incorporated. The result is one of the finest hospitals in London, and, thanks to a generosity so spacious as to recall the days of Whittington and Gresham and Thomas Sutton, the cost of equipping nearly all the departments has been met and some of them have been nobly endowed.

THE NEW BUILDINGS

The new building itself, rising to seven stories, yet with its projecting wings and crosspiece, still recalls the hospital familiar to a past generation, and, before that, the old building which stood here at the end of the eighteenth century, amid green fields and country lanes. Even the clock reappears in the pediment, though it now has a gold face instead of a plain one. The entrance hall, its walls panelled with large frescoes representing works of mercy, inspires cheerfulness and courage. On the other side it leads out on to a fine terrace, and this to an open court surrounded on its four sides by the main building.

Taking the laboratories, a word should be said in the first place about the Institute of Pathology, given by Sir John Bland-Sutton (who was very affectionately greeted at the opening as the "Grand Old Man" of the Middlesex staff). The institute, of course, began well within the era of the old hospital, but the gift has been an inspiration to a great succession of givers. It was followed by the Courtauld Institute of Biochemistry, and now Mr. S. A. Courtauld has crowned his long series of gifts by one of £15,000 for fitting up a portion of the crosspiece of the new hospital as a unit for clinical research. Here the professors of pathology, biochemistry, and physiology will be associated for the first time with members of the clinical staff in the care and study of cases of obscure disease.

The radiotherapy department, the gift of Mr. E. W. Meyerstein, will soon be fully functioning. The staff and experts have visited Continental and other centres, and the Middlesex Hospital authorities are assured that they will have the best-equipped department of radiotherapy to be found perhaps anywhere in the world. The *x*-ray diagnostic department, to complement the other, was the gift of Mr. W. H. Collins, and began its work on the day of the hospital opening. The crown was put upon the ceremony by the announcement of two further donations, each of £50,000, to endow these two departments, the one from Mr. Meyerstein and the other from Mr. Collins. It was significant that this announcement was received with laughter as well as cheers, for Middlesex, though never growing *blasé* amid its multitude of benefactors, has yet received so many surprising gifts that it begins to regard its fairy godfathers with grateful amusement. It will always be a tale to be told in the annals of the Middlesex how Mr. Meyerstein, after having given £100,000 to the hospital, attended the first meeting of the board after his election, and wrote a cheque for over £85,000 to wipe off the remaining debt.

An operating theatre bears the name of Mr. Stafford Bourne, whose gift it is. A complete unit has been planned for the following of a fracture case from start to finish. Prince Arthur referred, without naming it, to the recent British Medical Association report when he said that scientific inquiry had shown that not all the possibilities in the care of fractures had as yet been developed. The new unit will ensure continuous supervision, through every process of treatment, by the surgeon in charge.

HOMES FOR NURSES

The greatest single gift received, from an anonymous donor, is the splendid new home for the nurses, offering ideal conditions of residence and recreation. To this immense improvement Dr. Essex Wynter has added the finishing touch by presenting to the hospital his beautiful house, Bartholomew Manor, Newbury, with a number of sixteenth century cottages, all modernized without losing their charm, as homes of rest for retired sisters and nurses. Lord Woolavington made possible the provision of a block for paying patients, which has been opened for more than a year and has proved an unqualified success. Another item, not included in the reconstruction plans, is residential provision for senior students, and here another gift of £20,000 from Mr. Meyerstein has guaranteed the cost.

The completion of the new Middlesex is the best possible celebration of the centenary of the Medical School, which was established in 1835.

The returns from universities and university colleges in receipt of Treasury grants for the academic year 1933–4 have now been issued by the University Grants Committee (H.M. Stationery Office, 1s. 3d.). Of the 50,737 full-time students to which this publication relates, medicine and dentistry claim 11,951; of these 10,426 were men and 1,525 women. Edinburgh and Glasgow Universities head the list with totals of 1,266 and 1,073 respectively. The schedule of degrees and diplomas obtained during the year and analysed according to faculties gives a total of 1,099 degrees and 1,211 diplomas under "medicine including dentistry" in Great Britain.

BIRTHDAY AND JUBILEE HONOURS

The Honours List, issued on the occasion of the King's birthday, and in commemoration of the completion of the twenty-fifth year of His Majesty's reign, includes the names of the following members of the medical profession:

O.M.

Sir FREDERICK GOWLAND HOPKINS, LL.D., D.Sc., M.B., F.R.C.P., President of the Royal Society, in recognition of his eminent services to biochemistry, especially in connexion with the discovery of vitamins.

Baronet

Sir HENRY JACKSON, M.B., M.P., for services in connexion with transport questions.

G.C.V.O.

Sir EDWIN COOPER PERRY, M.D., F.R.C.P., Consulting Physician to Guy's Hospital, formerly Principal Officer and Vice-Chancellor of the University of London.

G.B.E. (Civil Division)

Sir GEORGE NEWMAN, K.C.B., M.D., F.R.C.P., F.R.C.S. (hon.), lately Chief Medical Officer, Ministry of Health and Board of Education.

K.C.B. (Military Division)

Lieut.-General JAMES ANDREW HARTIGAN, C.B., C.M.G., D.S.O., M.B., B.S., late R.A.M.C., Honorary Physician to the King, Director-General, Army Medical Services, the War Office.

K.C.V.O.

A. JAMES WALTON, M.S., F.R.C.S., Surgeon to His Majesty's Household.

LANCELOT EDWARD BARRINGTON-WARD, M.B., Ch.B., F.R.C.S.

K.B.E. (Military Division)

Air Vice-Marshal JOHN MCINTYRE, C.B., *M.C.*, M.B., B.Ch., R.A.F. (retired).

D.B.E. (Civil Division)

Mrs. ANNIE JEAN CONNOR, M.D., for services in connexion with maternal and child welfare in the Commonwealth of Australia.

Miss CONSTANCE ELIZABETH D'ARCY, M.B., for services in connexion with maternal and child welfare in the Commonwealth of Australia.

Knighthood

Professor ARTHUR JOHN HALL, M.D., D.Sc., F.R.C.P., Emeritus Professor of Medicine in the University of Sheffield, for distinguished service to medicine and medical science, with special reference to problems of the health of industrial workers.

PATRICK PLAYFAIR LAIDLAW, B.Ch., F.R.C.P., F.R.S., Pathologist to the Medical Research Council, for distinguished service to medical science.

JOHN VIGERS WORTHINGTON, M.R.C.S., L.R.C.P., Member of Parliament for the Forest of Dean Division of Gloucestershire since 1931, Parliamentary Private Secretary to the Prime Minister.

WALTER BURFORD JOHNSON, C.M.G., M.B., Director of Medical and Sanitary Services, Nigeria.

C.B. (Civil Division)

Surgeon Rear-Admiral JOHN SCARBOROUGH DUDDING, O.B.E., M.R.C.S., L.R.C.P.

Colonel LIONEL DANYERS BAILEY, *M.C.*, T.D., M.R.C.S., L.R.C.P., D.P.H., Honorary Physician to the King, Territorial Army.

C.B. (Military Division)

Major-General JOHN WEIR WEST, C.M.G., C.B.E., M.B., M.Ch., late R.A.M.C., Honorary Surgeon to the King, Professor of Military Surgery, Royal Army Medical College, and Consulting Surgeon to the Army.

Major-General RALPH BIGNELL AINSWORTH, D.S.O., O.B.E., late R.A.M.C., Honorary Physician to the King, Commandant and Director of Studies, Royal Army Medical College.

Major-General THOMAS GEORGE FERGUSON PATERSON, D.S.O., M.B., I.M.S., Honorary Physician to the King, Deputy Director of Medical Services, Northern Command, India.

Major-General CHARLES WILLIAM FRANCIS MELVILLE, M.B., F.R.C.S.Ed., I.M.S., Honorary Physician to the King, Deputy Director of Medical Services, Eastern Command, India.

C.M.G.

DAVID DUFF, M.D., Director of Medical Services, Gold Coast.

C.I.E.

Lieut.-Colonel BERNARD HIGHAM, M.B., B.S., I.M.S., Chemical Analyst to the Government of Bombay.

Lieut.-Colonel ROBERT KNOWLES, M.R.C.S., L.R.C.P., I.M.S., Professor of Protozoology and Secretary of the Calcutta School of Tropical Medicine, Bengal.

C.V.O.

CHARLES GORDON HOLLAND MOORE, M.B.

C.B.E. (Civil Division)

Miss ELIZABETH BOLTON, M.D., B.S., Dean of the London (Royal Free Hospital) School of Medicine for Women, Senior Surgeon, Elizabeth Garrett Anderson Hospital.

Major the Honourable ARTHUR EDMUND COLVIN, *M.C.*, M.B., Chairman of the Hospitals Commission, State of New South Wales.

CECIL EVELYN COOK, M.D., Chief Protector of Aborigines, Northern Territory, Commonwealth of Australia.

HAMILTON WILLIAM DYKE, M.B., Principal Medical Officer, Bechuanaland Protectorate.

LAURENCE EDWARD KEEGAN, M.D., Superintendent, General Hospital, Newfoundland.

ROBERT EDWARD MCKECHNIE, M.D., C.M., LL.D., F.R.C.S., F.A.C.S., Chancellor, University of British Columbia, for public services to medicine and education in the Dominion of Canada.

MICHAEL HERBERT WATT, M.D., Director-General of Health, Dominion of New Zealand.

Miss MILLICENT VERE WEBB, L.R.C.P. & S., L.R.F.P.S., Chief Medical Officer, Women's Medical Service, and Secretary of the Funds under the Presidency of the Countess of Willingdon.

GEORGE WILLIAM MARSHALL FINDLAY, O.B.E., M.D., D.Sc., Member of the Scientific Staff of the Wellcome Research Institution, London, for services in connexion with the study and prevention of yellow fever.

CHARLES JOHNSTON SMITH, O.B.E., M.B., F.R.C.S., Senior Surgeon, Singapore, Straits Settlements.

C.B.E. (Military Division)

Colonel WALLACE BENSON, D.S.O., M.B., late R.A.M.C., Assistant Director of Medical Services, London.

O.B.E. (Civil Division)

GEORGE HUGH CULVERWELL, M.D., D.P.H., Medical Inspector of Reformatory and Industrial Schools, Home Office.

ALLAN ROY DAFOE, M.D., for devoted public services as a practising physician in the Dominion of Canada.

Miss HELEN MARY MAYO, M.B., for services in connexion with maternal and child welfare in the State of South Australia.

HENRY SAUMAREZ HENSMAN, L.M.S., M.R.C.S., L.R.C.P., Superintendent, Government Mental Hospital, and Lecturer in Mental Diseases, Medical College, Madras.

DADABHAI DINSHAH VARIAVA, M.B., B.S.Bombay, F.R.C.S. Ed., Civil Surgeon and Superintendent, Aden District Prison, Aden.

JAMES FREDERICK CORSON, M.B.E., M.D., Medical Officer, Tanganyika Territory.

FREDERICK VICTOR NANKA-BRUCE, M.B., for public services in the Gold Coast.

O.B.E. (Military Division)

Surgeon Captain CHARLES FOX OCTAVIUS SANKEY, M.B., B.S., R.N.

Major ARTHUR JOSEPH BEVERIDGE, *M.C.*, M.B., R.A.M.C., late Instructor and Medical Officer, Anti-Gas Wing, Small Arms School, Winterbourne Gunner.

Major FRANK ARNOLD GUNASEKERA, M.R.C.S., L.R.C.P., Ceylon Medical Corps, Ceylon Defence Force.

Major ARNOLD GUY HARSANT, M.D., M.S., F.R.C.S., R.A.M.C., Surgical Specialist, Egypt.

Wing Commander TERENCE CHARLES ST. CLESSIE MORTON, M.D., M.R.C.P., D.P.H., D.P.M., D.T.M. & H., R.A.F.

M.B.E. (Civil Division)

GEORGE FERGUSON, M.D., for services in connexion with the prevention and treatment of tuberculosis in the Dominion of Canada.

Mrs. DORIS CLIFTON GORDON, M.B., for services in connexion with maternal and child welfare in the Dominion of New Zealand.

DAW SAW SA, F.R.C.S.I., D.P.H., Private Medical Practitioner, Burma.

Miss WENEFRIDE THOMPSON, M.R.C.S., L.R.C.P., St. Luke's Hospital, Chabua, Lakhimpur, Assam.

M. R. RY BANDI ETHIRAJULU NAYUDU GARU, L.M.S., Dip. Hyg., D.T.M. & H., Assistant Director of Public Health, Madras.

Lieutenant JOHN AUTY ROGERS, M.R.C.S., L.R.C.P., Indian Medical Department, Assistant to the Surgeon to His Excellency the Viceroy.

Mrs. HELENA MURIEL PUDNEY, M.B., for services in connexion with child welfare work in Lagos, Nigeria.

KHONG KAM TAK, M.B., Medical Superintendent of the Hospital of the Perak Chinese Maternity Association, Ipoh, Federated Malay States, for public services.

M.B.E. (Military Division)

Subadar-Major and Honorary Captain KHAN BAHADUR MUHAMMAD HUSAIN, Indian Medical Department, Indian Military Hospital, Lahore, India.

1st Class Assistant Surgeon CYRIL SYMONDS, Indian Medical Department, Quetta, India.

Kaisar-i-Hind Medal (First Class)

Miss EMILY GERTRUDE STUART, M.B., Church of England Zenana Mission Society Hospital, Quetta, Baluchistan.

British Empire Medal (Civil Division)

OSMAN MOHAMMED KHEIR, Dispensary Doctor, Sudan, for meritorious service.

LEBANON HOSPITAL FOR MENTAL DISEASES

At the thirty-sixth annual meeting of the Lebanon Hospital for Mental Diseases, Asfuriyeh, Beirût, Syria, held in Friends House, Euston Road, the chairman, Lord ALNESS, said that the history of this hospital was a veritable romance. The acorn of 1896 had in 1935 become a great and spreading oak-tree. He had noticed with interest the part played in its inception by two eminent Scottish psychiatrists, Sir Thomas Clouston (Edinburgh) and Dr. David Yellowlees (Glasgow). In memory of them and of the work of the Scottish committees, as well as in honour of the (then) medical director and the matron, a new house, opened in November, 1933, had been named the Scottish House. Lord Alness spoke of the great need for a larger institution, despite the many extensions and enlargements of recent years. In England there were an almost incredible number of beds in mental hospitals in relation to the population: in Syria, with its sparse population and stormy history, there was only one for every 16,000 people.

After the audience had stood for a few moments in respect for the memory of Dr. Henry Watson Smith, medical director for twenty-five years, who had died suddenly a few days after the last annual meeting, Dr. PERCY SMITH (president) presented the medical report and Dr. E. W. G. MASTERMAN the report of the general committee. Dr. Masterman, as chairman of that committee, paid a warm tribute to the work of the late director, and spoke of the striking way in which a successor had at once been found in Dr. R. Stewart Miller, who took up duty on September 1st. Dr. Miller was intimately acquainted with mental diseases in the Near East through his work as head of the large Government mental hospital at El Khanka, near Cairo; he spoke Arabic and French, and was familiar with the officials and ways of these countries. The work had gone forward without a break, and the numbers had never been so high as at present. Soon after his arrival Dr. Miller had been appointed lecturer in mental diseases at the University of Beirût and mental expert to the Criminal Court.

A vivid description of the place and its position in the life of the country was given by Miss MARGARET EMMOTT, chairman of the Syria Committee of the Friends Service Council, who had known it on and off for ten years and had recently paid a special visit for study. It always gave an impression not of restriction but of space and freedom, and its growth contrasted delightfully with the financial depression and contracted activity to be found almost everywhere else in Syria. In her opinion the Franco-Syrian authorities would continue to send the very poor for treatment there (as they had now done for some years, paying a capitation fee that covered out-of-pocket expenses though not the cost of medical and nursing care). The matron, Miss JANE GIBB, gave some particulars of the nursing, which—apart from two assistant matrons and herself—is done by Syrians. These are uneducated village men and women, who receive training at the hospital, and usually remain for years. Dr. F. J. WALDMEIER, son of the founder, moved a vote of thanks to the auxiliary committees in America, Switzerland, Holland, and France, and to the local treasurers in England, Scotland, and Ireland. Sir ROBERT ARMSTRONG-JONES moved a vote of thanks to the chairman.

NUTRITION ADVISORY COMMITTEE

The Minister of Health and the Secretary of State for Scotland have appointed an advisory committee with the following terms of reference: "To inquire into the facts, quantitative and qualitative, in relation to the diet of the people, and to report as to any changes therein which appear desirable in the light of modern advances in the knowledge of nutrition."

The members of the committee are: Lord Luke (chairman), Mrs. Eleanor Barton, Mr. J. N. Beckett, Dr. G. F. Buchan, Professor E. P. Cathcart, F.R.S., Mr. R. R. Enfield, Dr. J. Alison Glover, Dr. J. M. Hamill, Dr. A. Bradford Hill, Sir F. Gowland Hopkins, P.R.S., Dr. Donald Hunter, Professor E. Mellanby, F.R.S., Sir John Boyd Orr, F.R.S., Mr. E. C. Ramsbottom, Mr. J. M. Vallance, Dr. Mary Chalmers Watson, Mr. J. R. Willis, Mr. E. H. T. Wiltshire.

The secretaries of the committee are: Mr. W. J. Peete of the Ministry of Health, London, S.W.1, to whom all communications on the subject should be addressed; Mr. N. F. McNicoll of the Department of Health for Scotland; and Dr. H. E. Magee of the Ministry of Health (medical secretary).

England and Wales

Atmospheric Pollution

Representatives of local authorities and other organizations co-operating with the Department of Scientific and Industrial Research in the investigation of atmospheric pollution met on May 27th in the half-yearly conference at the offices of the department. The gathering included representatives from Barnes, Barnsley, Birmingham, Dagenham, Glasgow, Halifax, Lancaster, Leicester, Liverpool, City of London, London County Council, Manchester, Royal Leamington Spa, Salford, Surrey County Council, Westminster, Willesden, Messrs. Cadbury Brothers, and the British Commercial Gas Association. The conference, over which Mr. W. Brownhill Smith presided, received a report from Dr. G. M. B. Dobson, F.R.S., on the progress of the researches carried out under the Atmospheric Pollution Research Committee. Dr. Dobson said that a full-time investigator had been appointed by the department as a preliminary to the undertaking of an intensive survey, at a selected centre, of various types of pollution with a larger number of instruments. The method developed at the Building Research Station for estimating sulphur in the atmosphere was now being adopted more widely by local authorities. Further experiments combined with weather observations were being taken in hand to facilitate the interpretation of the data collected by means of the deposit gauge observations. The conference emphasized the aid that could be given by local authorities in the conduct of the investigations, and it was agreed that a circular letter be sent to them suggesting particular directions in which their help would be most useful.

Health Work of the City

On May 29th a presentation luncheon was given in Painters' Hall to Sir H. Percy Shepherd, immediate past-chairman of the Public Health Committee of the Corporation of the City of London. The present chairman of the committee (Captain G. S. Elliston, M.P.) presided, and among the guests were the Lord Mayor and Sheriffs. After the King's health had been honoured Mr. Geoffrey Shakespeare, M.P., Parliamentary Secretary to the Ministry of Health, proposing the civic toast, spoke of Captain Elliston's services in the House of Commons during the passage of the Housing Bill, and paid a warm tribute to the efficiency and generosity of the public health services of the City; he also recalled the happy alliance

between the Corporation and St. Bartholomew's Hospital throughout the centuries. The Lord Mayor (Sir Stephen Killik), in acknowledging these compliments, referred to the fine work carried out by the Corporation on behalf of the million people who spent their working lives in the City of London, and its services to the metropolis and the country at large through supervision of the meat and fish markets and the Port of London. Captain Elliston, in submitting a toast to the past chairman, mentioned some of the activities of the Public Health Committee during Sir Percy Shepherd's term of office. Its change of title from "Sanitary Committee" indicated how the whole scope of public health work had widened in modern times. The word "sanitary" no doubt owed its long life to John Simon, the first medical officer of health, whose reports on the sanitary state of the City and of England were classics in the literature of preventive medicine. Among those whom Captain Elliston particularly welcomed, in proposing the health of the guests, were two high medical representatives of the War Office, the Chairman of Council and Medical Secretary of the British Medical Association, the Editors of the *Lancet* and the *British Medical Journal*, the Dean of the London School of Hygiene, and several leading medical officers of health. These toasts were acknowledged by Sir Percy Shepherd and Lord Balfour of Burleigh, and the Chairman's health was proposed by the senior alderman, Sir George Truscott.

Child Guidance in Education

Dr. Ralph Crowley, chairman of the Executive Committee of the London Child Guidance Council, was the principal speaker at the annual meeting of the Manchester Child Guidance Clinic on May 23rd. The annual report of the clinic stated that an increasing number of cases were referred by parents, indicating a recognition of the need of a clinic by those who were most likely to benefit by the service offered. Dr. Crowley, in seconding the adoption of the report, suggested that the great advancement in the provision for the physical and intellectual development of children had not yielded the fruits hoped for because we had left to chance the development of the emotional side, which was the side that mattered. On a sound basis of emotion could be built both the individual and the community life. The child guidance clinic, he said, should not be regarded as something superimposed upon existing educational and health services, but as something arising out of these. People were beginning to realize that education was a biological process. The education of the child must be extended right up to the end of the developmental period, which was 18. It was said to be impossible to combine education and industry. It had got to be possible.

Joint Tuberculosis Council

At the May meeting of the Joint Tuberculosis Council, at which twenty-two members were present, Mr. Girdlestone's resignation was accepted with sincere regret. On behalf of the Milk Committee Dr. Hawthorne reported that a feeding experiment would shortly be begun in which it was proposed to feed 2,000 children on raw milk and 2,000 on pasteurized milk. Dr. Brand stated that twenty participants had followed the post-graduate course at Victoria Park Hospital from February 25th to March 2nd. Dr. Peter Edwards had held three courses this year and proposed a fourth from July 2nd to 4th. Arrangements for the study tour in Denmark were approaching completion, and the Brompton Hospital would give a post-graduate course from November 4th to 9th. The honorary secretary, Dr. Ernest Ward, reported visits to the College of Nursing and the General Nursing Council on the subject of post-graduate study in tuberculosis for nurses. Drs. Tytler and Peter Edwards promised a note for the next council meeting on modern methods of sputum examination. It was suggested that the gasolene concentration method might prove more efficient than culture, as in 4 per cent. of specimens of sputum containing tubercle bacilli the bacilli were dead.

India

All-India Ophthalmological Conference

The All-India Ophthalmological Society held its fourth conference at Madras at the end of April, under the presidency of Lieut.-Colonel R. E. Wright, professor of ophthalmology and superintendent, Government Ophthalmic Hospital, Madras. On the first day Dr. E. V. Srinivasan welcomed the members on behalf of the Reception Committee, and the secretary, Dr. G. Zachariah, introduced Sir Mahomed Usman, who opened the session with a short address, which dealt with the history of the Government Ophthalmic Hospital, Madras, and its influence in the spread of ophthalmology in India, particularly in the direction of post-graduate teaching, in recent years. After Colonel Wright had delivered his presidential address a number of papers were read on nutritional disorders of the eye. The discussion centred chiefly on keratomalacia or xerophthalmia (these terms being used by speakers as equivalent to the congeries of pathological changes resulting from a polydeficiency, in which vitaminosis A appears to play a predominant part). This common condition, familiar to workers in the East for many years, is prominent as a cause of preventable blindness. Contrary to views expressed by recent workers in England and elsewhere, skin rashes, with the exception of lichen pilaris, were not considered more frequent in keratomalacia than in the general hospital population. The same applies to pyogenic infections in general. The view was expressed that many laboratory workers were unfamiliar with the well-developed human disorder as it occurred in bulk; hence certain divergencies of opinion in recent literature. On the second day an interesting programme of twelve short papers was given by members of the hospital staff. Members were able to examine the extensive collections of intracranial lesion radiographs, water-colour pictures, and stereophotos of external diseases of the eye, and the various other exhibits of the museum. Clinical cases were demonstrated, including a group of twenty patients showing the various manifestations of keratomalacia. Prevention of blindness was discussed at the end of the afternoon session following an exhibition of coloured posters and lantern slides prepared for the Association for the Prevention of Blindness, Bengal, by Lieut.-Colonel E. O'G. Kirwan. Red Cross posters designed in New Delhi and local Madras posters were also exhibited. The final session was held in the Library Hall of the Madras Medical College, when a number of papers were presented. The subject of greatest interest was primary non-congestive glaucoma, the Calcutta members bringing forward experience in connexion with the recent outbreaks of epidemic dropsy. The fact that in the excessively high tensions of epidemic dropsy glaucoma field and disk changes might be absent for months elicited interesting discussion. Decompression by sclerocorneal trephining was still employed extensively in Calcutta, hundreds of operations having been performed in the last few months. In connexion with the prevention of blindness, it was considered by the committee that the responsibility of governing authorities was insufficiently realized, and that certain recommendations should be put before the authorities in British India and the Indian States.

Centenary of the Bengal Medical College

In 1835, in accordance with an Order in Council issued by Lord William Bentinck (at that time Governor-General of India), there came into being a medical college in Calcutta, which replaced pre-existing medical teaching institutions, provided a four-years curriculum in European medicine and surgery, and was empowered to grant certificates to practise which would be valid for appointments under Government. In celebration of the passing of a hundred years of great progress from small beginnings, a centenary volume has been issued, copies of which are obtainable from the Secretary, Medical College Hospitals, Calcutta, the price being 2 rupees 8 annas, exclusive of postage. Much of the information this

volume contains is derived from the records collected by Lieutenant-Colonel T. C. Boyd, I.M.S., the present principal of the medical college. In less than two years from its foundation anatomy became part of the necessary studies—an outstanding achievement in view of the prevalent hostility to the practice of dissection. Regular courses of lectures were given in the first year, and arrangements were made for the students to observe the actual treatment of disease in the city dispensaries and hospitals. Towards the end of 1838 there arose a great demand for "native doctors" in the Army, and accordingly classes in Urdu in anatomy, materia medica, medicine, and surgery were begun as auxiliaries to the older ones which were conducted in English. The first examinations were held towards the end of 1838 after three and a half years of study, and were deliberately made severe, but the report of the examiners was very encouraging and included a recommendation that those who then qualified should receive three times the rate of pay which had been previously contemplated. In 1845 the College remodelled its curriculum to conform with the regulations of the Royal College of Surgeons in England and of the Apothecaries' Society, with the ultimate object of getting it duly registered in England; this was achieved in the next year, the College being also recognized then by the University of London. This was the first instance of any educational institution in British India being granted the privilege of preparing pupils for the academic and professional rewards of corporate chartered bodies in England. The foundation stone of the new Medical College Hospital was laid in 1848 by the Marquess of Dalhousie, then Governor-General of India, and the first patients were treated in it in March, 1852. The University of Calcutta was founded in 1857, and the Medical College was affiliated to it, the curriculum being then modified by the addition of a course in practical chemistry and of additional clinical lectures. The centenary volume contains an interesting account of the controversy attending the introduction of Listerian methods. It also records that in 1865 the first Branch of the British Medical Association in India had been started in Calcutta, but was nearly extinguished in 1867 owing to dissension arising out of a paper read on homoeopathy.

Scotland

Lord High Commissioner at Glasgow Hospitals

The Duke and Duchess of Kent spent Tuesday, May 28th, in Glasgow, their chief engagements being the opening of a new wing for fee-paying patients at the Victoria Infirmary, and the laying of the foundation stone of the Royal Infirmary Auxiliary Hospital at Canniesburn. At the Victoria Infirmary the Duke of Kent said that, including the new wing for paying patients, there were now 477 beds in the hospital. The growth of the hospital had been rapid since its opening in 1890, when there were only eighty-four beds. The advance of medical knowledge in the past few years had done much to relieve the sufferings of the sick, but such knowledge was by itself useless unless it was assisted by the competent organization of a large hospital. The nurses' part in a hospital was never so spectacular as that of the doctors, but he was sure that everyone would agree that it was just as important. The extension of the hospital had naturally required an increase in the nursing staff, and the new home would provide accommodation for 145 nurses. At the new fee-paying ward the Duchess of Kent cut a red-white-and-blue ribbon and declared the extension open. After luncheon in the City Chambers their Royal Highnesses proceeded to Canniesburn. Sir James Macfarlane, chairman of the Royal Infirmary, who had presented the site upon which the new hospital is to be erected, presided, and said that the Glasgow Royal Infirmary, the oldest and largest hospital in the city, had been seriously overcrowded for a considerable time, and ten years ago a scheme had been suggested for meeting the increased demands upon it. No public appeal had been issued, but the scheme seemed to have carried its own appeal, and money had been received in large sums amounting to over £100,000. The Duke of Kent said that during its long life Glasgow Royal Infirmary had done much to help in the struggle against sickness. Unfortunately, in many cases, patients were not able to afford the change of air and surroundings which had always been recognized as of great assistance to those recovering from serious illness. This auxiliary hospital would just serve that purpose.

On May 29th the Duke and Duchess paid a visit to Leith Hospital, where they toured the wards and chatted with the children; and on May 30th the Duke of Kent visited the Royal Edinburgh Hospital for Sick Children. At the Edinburgh Foot Clinic and School of Chiropody the Duke of Kent unveiled a memorial tablet to the late Viscount Novar, who had been for many years president of the institution. Chiropody, the Duke said, was a branch of medical science which during the last few years had fought successfully the struggle for recognition, and it was largely due to the hard work and never-failing support of the late Lord Novar that chiropody had been able to assume its present position.

Insurance Practice in Edinburgh

The report dealing with the administrative work of the Insurance Committee for the burgh of Edinburgh from June, 1929, to May, 1935, shows that the number of medical practitioners on the panel has increased during these six years from 192 to 215, and now includes twenty women. The proportion of general practitioners upon the list is 80 per cent. of doctors in general practice as compared with 40 per cent. in 1917. The service is equal to one doctor for every 850 insured persons in the area, the maximum for a single-handed practice being 2,500. Not more than 9 per cent. of doctors in single-handed practice have over 2,000 insured persons on their list; about the same proportion have between 2,000 and 1,500 patients; 20 per cent. have between 1,500 and 1,000; 24 per cent. between 1,000 and 500; while 38 per cent. have fewer than 500 insured persons. The highest number of insured persons on the combined list of partners in the Edinburgh area is 3,838, the average for partnerships being 1,578. Payments to doctors during the six years amounted to £445,417, and the following figures give an indication of the average income of doctors from insurance practice prior to the introduction of the economy cut: 4 per cent. received over £1,000; 33 per cent. between £500 and £1,000; 24 per cent. between £250 and £500; 16 per cent. between £100 and £250; and 23 per cent. under £100. Attention is drawn in the report to the absence of complaints, and the small number of cases in which patients desired to exercise the right of changing their doctor. There were only two complaints by insured persons against doctors which were substantiated during the six years, and the proportion of insured persons who changed their doctor was less than 1 per cent. per annum.

Proposed New Edinburgh Hospital

The Public Health Committee of Edinburgh Town Council on May 28th passed a scheme of reconstruction for the Western General (Municipal) Hospital at Craigleith, Edinburgh, at an estimated cost of £120,000. The buildings at present occupied by this hospital were erected in 1868 as a poorhouse, and it is not proposed to recondition them. There is, however, surrounding ground extending to over twenty-four acres, and upon this new buildings are to be erected. The general scheme is to effect the reconstruction by degrees without putting the present hospital out of commission, so that gradually the same number of beds as at present may be provided by means of accommodation more suitable for treatment and teaching. The new buildings are to be erected for replacement as follows: first, a new nurses' home to the north of the present hospital, after which the west wing of the old hospital block will be demolished; upon the latter site a new surgical unit will then be built, seven stories high, with lifts, and providing for 182 patients with

theatres and other adjuncts ; next, the east wing will be demolished, thus providing another 182 beds in a similar new building. It is proposed to leave the centre part of the present building as an administrative centre, and to build behind it a new kitchen. Much of the material in the present hospital will be used in the reconstruction at a saving of £55,000.

Reports of Societies

ROYAL SOCIETY OF MEDICINE

At the meeting of the Section of Medicine of the Royal Society of Medicine on May 28th, with the president, Sir FARQUHAR BUZZARD, in the chair, three interesting communications were made.

Parenteral Liver Therapy

Dr. C. C. UNGLEY showed two cinematograph films illustrating parenteral liver therapy in pernicious anaemia and subacute combined degeneration. The first, lent by Dr. W. P. Murphy of Boston, U.S.A., was chiefly concerned with the haemopoietic effect of liver extract administered intramuscularly. The rate of blood regeneration (shown by " animated " diagrams and by comparative blood films) was shown to be more rapid than with liver given perorally. The reticulocyte increase appeared the second day after two initial injections of phials of liver extract (Lederle), and reached its peak by the fourth day. Afterwards the reticulocytes decreased and the red blood cells increased. On weekly injections the red blood cells increased during the first two weeks at the rate of 140,000 a day. The simultaneous administration of iron hastened the increase of haemoglobin. It was found that 3 c.cm. of liver extract (Lederle), derived from 100 grams of liver, when injected once a month was often sufficient to maintain a red blood cell count of 5,000,000 per c.mm. Re-educational exercises were also depicted, in conjunction with which this treatment had been found to give good results in cases with subacute combined degeneration. Among the several patients shown on the film were some who because of ataxia walked only with considerable help, but three months later, thanks to this treatment, were walking almost normally.

The second film showed results obtained in Newcastle-upon-Tyne, using intensive parenteral liver therapy, in over thirty cases of subacute combined degeneration. Campolon or " pernaemon forte " was given in doses of from 15 to 42 c.cm. a week. In one instance the patient had received campolon for eighteen months and had at first improved, but after a time the improvement ceased, and she gradually became worse, without obvious cause, except a certain amount of urinary affection. It was then decided, parenteral liver therapy alone having evidently ceased to be effective, to try the use of short-wave electrical pyrexia, and improvement did follow after six weeks of such treatment. Where the duration of difficulty in walking was less than two years there was usually considerable improvement in gait (as shown graphically in the film) and in the symptoms and signs of nervous involvement. In reply to Dr. J. W. MCNEE, Dr. UNGLEY said that he had attempted to treat three cases with artificial pyrexia. The first was a man of about 55, who stood the treatment very badly and refused further treatment after one attempt ; the second was a man of about the same age, who stood only a few treatments, and seemed to be very weak after them, whether on account of arteriosclerosis or not he could not say, and the treatment was discontinued after three or four weeks. The only case which had undergone the full course of this treatment was that of the woman he had mentioned in showing the second film.

Dr. W. M. FELDMAN asked whether there were natural remissions in the course of subacute combined degeneration ; it seemed important to settle that point in estimating the value of campolon. Sir FARQUHAR BUZZARD, on this last point, said that before liver therapy came in nothing like the remissions which appeared under that treatment were to be seen. Remissions as regards the blood picture were seen, but with no correspondence in the neurological picture. Dr. UNGLEY said that the only other method of treatment which he had used in a large series of cases was whole liver, and this did produce good results, but in a smaller proportion, the disadvantage being that several pounds of liver a day were required as an equivalent to the convenient dose given by the intramuscular method. He had used brain in some cases, and it produced results comparable with whole liver, but did not maintain the red blood cell content. It was also difficult to persuade patients to take one pound of raw brain a day. Easily the most satisfactory method was the intramuscular one.

Sanocrysin in Pulmonary Tuberculosis

Dr. G. GREGORY KAYNE contributed some remarks on the use of sanocrysin in pulmonary tuberculosis. He said that, although much work with sanocrysin had been done during the ten years that had followed Moellgaard's first publications, no unanimity of opinion existed as regards its effects or mode of application. His remarks were not based on his own treatment of cases, but on observations made during visits to various European centres. Sanocrysin had no definite effect on tubercle bacilli *in vitro*. Moellgaard at first believed it to have a direct bactericidal effect in the animal body, but later he questioned this. Others invoked a stimulating action on the natural tissue defences. A beneficial effect from sanocrysin in animals had been reported by Madsen and Morch (who could not, however, repeat their results later), and by Cummins and Atkin. Bang believed Moellgaard's positive results to be due to the use of attenuated bacilli for infecting the animals. The speaker described in particular Secher's work in Copenhagen. Secher was a general physician in a general hospital, and his patients, after a short stay, passed on frequently to a sanatorium. Secher admitted very few contraindications, and even advised the use of sanocrysin in old fibroid cases and in pleurisy. His initial dosage was the highest administered at present. The speaker suggested that the beneficial effects obtained by Secher were due rather to the effect of shock therapy than to any specific effect of gold. Gravesen, at Vejlefjord Sanatorium, Denmark, used sanocrysin in the early exudative lesion, and as a valuable aid to collapse therapy. His dosage was moderate, beginning with 0.1 gram. Reactions were avoided as far as possible, but in a series of 500 cases two fatalities had occurred. Wurtzen and Permin had used it, but apparently not with any great conviction. The results of Saye of Barcelona were probably more telling than in other countries in view of the comparative lack of dispensary arrangements for the treatment of tuberculosis in Spain. Léon Bernard, in Paris, had treated several hundreds of out-patients, one-third of whom had not found it necessary to stop their work. His initial dose was 0.1 gram. In Norway and Sweden sanocrysin was almost never administered at present. The difficulty in the collection of reliable evidence as to the effect of sanocrysin in man was almost insuperable. Dr. Kayne, as the result of his Continental observations, discussed the types of cases in which sanocrysin might be of value, including the cases in which there were suspicious *x*-ray shadows, but no pronounced clinical signs. It was important not to be deterred too soon by mild reactions. Finally, if no improvement was discerned within six weeks, there was little justification for continuance.

Dr. PHILIP ELLMAN said that in light artificial pneumothorax sanocrysin had engaged a good deal of discussion. He felt that he would like to use it in such a condition, though, of course, discriminately. If some fifty tuberculosis cases were taken of a similar clinical type, all with a bilateral lesion and all on sanatorium regime, it would be found that the exudative cases treated with sanocrysin did better than those which were on sanatorium regime alone. On examining the sputum the elastic fibres would be found reduced and the number of bacteria

less, and the radiological evidence would indicate more frequent retrogression of the lesion. Sanocrysin was extremely valuable in association with collapse therapy. In a number of cases it was impossible to get a satisfactory result with collapse therapy alone. No patient should be discharged from a sanatorium with infective sputum, and sanocrysin had a valuable effect in reducing the infectivity of the sputum in many of these cases. In the early days the dosage of sanocrysin was rather too high, but now it seemed the opposite extreme had been reached, and patients were being under-dosed. He felt that if a start were made with a dose which the patient tolerated reasonably well one should not be afraid of pushing the sanocrysin until the patient had had 5 or 6 grams. He never increased the single dose beyond 0.75 gram, and he only brought it up to that if the patient was of reasonable body build. While he would not say that sanocrysin was invariably of value, he felt that as an additional form of treatment for pulmonary tuberculosis it had its definite place.

Haemostatic Uses of Snake Venom

Dr. BURGESS BARNETT described certain clinical trials of snake venom at St. Bartholomew's Hospital and elsewhere. He said that the venoms of many viperine snakes had been examined with a view to their therapeutic application as blood coagulants in haemophilia. The venom of *Vipera russellii*, the commonest and most dangerous viper in India, known as the daboia or tic polonga, had been found to be the most potent, and from this a sterile, stable product had been made which, when added to blood *in vitro*, behaved as an activated prothrombin. In the experience of those working on the subject it was the most rapid coagulant, both of normal and of haemophilic blood, clotting even the latter, when used in the concentration employed clinically, in less than one minute. The cases in which it had been used fell into three groups—namely, haemophilic subjects, subjects of other haemorrhagic conditions, and those with normal blood. Some of the haemophilic cases had been treated for profuse bleeding after dental extraction. In plugging it was found best to use a piece of wool shaped like a mushroom, with a short thin stalk, whereby the venom solution was squeezed into the cavity in such a way that the removal of the plug subsequently did not disturb the clot. The difficulty in the cases of haemophiliacs was not to get the blood to clot rapidly, but in the application of the venom solution to the bleeding part. One of the haemophilic patients had had epistaxis controlled by venom solution on several occasions with complete success. In normal blood the venom solution had been employed frequently in the dental department of St. Bartholomew's Hospital, and had failed in only two cases. It had also been employed in abdominal surgery, in tonsillectomy, and in prostatectomy. His conclusion was that the viper venom was a potent haemostatic in haemophilic and other haemorrhage when employed as a local application, and could be used in certain concentrations without toxic effects. The minimum lethal dose of the venom was said to be in the nature of 42 mg., so that in the dilutions in which it was employed something like 10 litres would have to be used to cause symptoms.

In reply to questions by Dr. GEORGE GRAHAM, Dr. MORLEY FLETCHER, and others, Dr. BARNETT said that there was no product on the market at present, but he thought it might be placed on the market because it was perfectly stable in the way it was now prepared, and as the snake was a common one in India there should be no difficulty in getting sufficient venom for the purpose. In the ordinary way the solution of the venom deteriorated very rapidly. In the summer at ordinary temperatures it was noticed that it began to go off in ten or fourteen days, but when the solution was dried and put up in ampoules it kept certainly for many months. As for temperatures, it had been tested for three hours at 120° F., and there was no loss in coagulating potency. He thought that in the sealed ampoules and in the dry state it would retain its potency indefinitely.

ASPECTS OF PITUITARY FUNCTION

At a meeting of the London Association of the Medical Women's Federation on May 28th, with Dr. E. PICKARD, the president, in the chair, Dr. D. S. RUSSELL discussed the pituitary body. After a few introductory remarks on the anatomy of the pituitary body and hypothalamus she dealt with the cytology of the anterior lobe, and gave the reasons for the belief that the acidophil (alpha) and basophil (beta) cells were derived by transition types from the non-granular, or so-called chromophobe, cells. Recent work by Severinghaus on the Golgi apparatus of these cells had pointed strongly in the same direction: the form of the apparatus, as demonstrated by osmic acid methods, was different in the two types of granular cell, and corresponding forms of the apparatus were to be found in the chromophobe cells. From this it was to be inferred that each chromophobe cell was predestined as a precursor of one or other of the two types of granular cell. There was no doubt that the so-called pregnancy cell was of the transitional acidophil type and not of the chromophobe series, as some writers had asserted.

THE ANTERIOR LOBE

Recent work on the isolation and investigation of the various anterior lobe hormones was then briefly reviewed. At the present time the existence of seven or eight different hormones had been widely accepted, and there were indications that one or two more might be added to the list in the near future. Human pathology as yet threw little light on the sites of elaboration of these hormones in the anterior lobe, with the outstanding exception of the growth hormone. There was incontrovertible evidence that this was secreted by the acidophil cells. The possibility that the gonadotropic hormone was formed by the basophil cells had been entertained in many quarters, but could not be regarded as an established fact. The effects upon the organism of partial and total ablation of the anterior lobe had been clearly demonstrated experimentally, and were recognized in human pathology, both in the pituitary cachexia of Simmond's disease, associated with complete or almost complete destruction of the anterior lobe, and in the combined dwarfism and infantilism usually described as of the Lorain type. Dr. Russell described a case of acute pituitary cachexia following upon division of the stalk in a case of suprasellar Rathke's pouch cyst, and also one of pituitary dwarfism, associated with a large suprasellar Rathke's pouch cyst.

Excessive pituitary secretion was, she said, exemplified in human pathology by gigantism and acromegaly, in which the disturbance was correlated with an adenoma of the acidophil cells. It was of interest that a transient acromegaly might appear in pregnancy, in which an excess of transitional acidophil cells were present in the anterior lobe. It might be expected, similarly, that an adenoma of the basophil cells would also be correlated with a distinctive clinical syndrome. Such a syndrome had been described by Harvey Cushing and was now well known as "pituitary basophilism." The adenoma in such cases had almost always been very small, so that no enlargement of the sella turcica could be detected radiographically. In these circumstances it had seemed remarkable and significant that so many examples of basophil adenoma could be predicted clinically and subsequently verified at necropsy. Certain difficulties, however, stood in the way of complete acceptance of this conclusion. In the first place, it had to be remembered that an identical syndrome had been described in cases of thymic tumour and cortical tumours of the suprarenal body with no obvious change in the pituitary gland. Secondly, it was undoubtedly true that a basophil adenoma could arise in the pituitary without an accompanying syndrome. Such a case had recently been reported by H. O. Close; the association in this case was with chronic Bright's disease and hypertension only. At the London Hospital A. C. Crooke had found, in a series of 300 serially sectioned unselected pituitary glands, a single example in which a relatively large adenoma of beautifully preserved and fully ripe basophil cells was unassociated with any element of

Cushing's syndrome. It seemed advisable to preserve an open mind until further information was available. Insufficient emphasis had perhaps been laid upon the possible part played by the suprarenal cortex in producing the syndrome. It was noteworthy that, apart from the correlation of the syndrome with cortical tumours, there had been a conspicuous hyperplasia of the suprarenal cortex in most of the recorded examples in which the syndrome was associated with a basophil adenoma and also in the cases of thymic carcinoma. Undoubtedly there was some biological link between the suprarenal cortex and the basophil cells. Thus in Addison's disease, in which the essential lesion was a destruction of the suprarenal cortex, there was a very marked numerical reduction in the basophil cells of the anterior lobe (Crooke and Russell, 1935).

THE POSTERIOR LOBE

With regard to the functions of the posterior lobe the speaker pointed out that our knowledge was most fragmentary. It was not known how, or by what cells, the two hormones generally known as pitressin and pitocin were elaborated, or how they acted in the normal physiology of the body. Attempts to identify them in the cerebro-spinal fluid and in the blood plasma had produced controversial results. There was no good evidence that destruction of the posterior lobe alone produced any demonstrable clinical effect. But the part played by such a lesion in the production of diabetes insipidus had for long been a subject of controversy. The general trend of recent work had indicated that the lesion responsible for the production of diabetes insipidus had to be so situated in the stalk or tuberal region that it interrupted the continuity of the nerve fibres passing from the hypothalamus down the stalk to terminate in the posterior lobe. In this connexion it was of considerable interest that a transient diabetes insipidus might result from operative procedures on the walls of the third ventricle in cases where no gross lesion of the pituitary was demonstrable.

Recently the theory formulated by Cushing that so-called basophilic invasion of the posterior lobe was responsible for eclampsia and the hypertensive state had attracted a good deal of attention. Attempts to confirm the theory had so far failed; in particular the work of C. Sharp on a series of seventy cases of hypertension, published last month, showed that there was no demonstrable correlation between this condition and the amount of basophilic invasion of the posterior lobe. A. C. Crooke had failed to find more than a very slight invasion in a series of four eclamptic pituitaries examined by serial section (unpublished). Apparently this had also been the experience of J. H. Biggart. It should be concluded, therefore, that we still have no clear conception of the part played by these basophil cells in the posterior lobe, if, indeed, they had any function.

In conclusion, the speaker suggested that, in face of recent tendencies to regard the pituitary as the master gland of the endocrine system, we should be wise in remembering the remarkable degree of intricacy in the relationships of members of this system. It was unwise to attribute a dominant role to any one gland until we knew more of the workings of the system as a whole.

The British Committee for the Seventh International Congress on Industrial Accidents and Diseases, to be held in Brussels from July 22nd to 27th, 1935, has been constituted as follows: Sir Thomas Oliver, M.D. (Chairman), Drs. Wm. Seaman Bainbridge, Gilbert Burnet, J. C. Byrd, D. A. Coles, and Howard E. Collier, Professors Edgar L. Collis and S. L. Cummins, Dr. Philip Ellman, Sir Harold B. Fawcus, Mr. Wellwood R. Ferguson, Dr. S. W. Fisher, Professor John Glaister, Drs. S. A. Henry F. L. Hoffman, H. G. Kessler, and R. E. Lane, Professor P. S. Lelean Colonel D. J. Mackintosh, Mr. Frederick P. Mills, Mr. D. G. Monteith, Miss Olga Nethersole, Lieut.-Colonel J. A. A. Pickard, Dr. T. E. A. Stowell, Dr. Chas. S. Thomson, Mr. Ridley Warham, Mr. W. G. Webster. Further particulars may be obtained from Mr. G. L. Perry, secretary, Industrial Welfare Society, 14, Hobart Place, Westminster, S.W.1.

CORRESPONDENCE

London House

SIR,—We are anxious to direct the attention of the medical profession to a letter signed by General Smuts, Mr. Bruce, Sir Robert Borden, Sir James Parr, and Lord Lugard, and to a leading article in the *Times* of May 27th.

In this letter an appeal is made to the public to support financially a scheme for the completion and endowment of London House, an institution which has already proved invaluable to a large number of post-graduate medical students from over-seas, and which is destined to play a very important part in the educational life of the Empire. London House, situated in Mecklenburgh Square and opened in 1931, owes its origin largely to the enthusiasm and hard work of the late Mr. Frederick C. Goodenough, whose ambition it was to establish a home for students from all parts of the Empire with amenities and facilities for the completion of their education similar to those afforded by the colleges of our more ancient universities. The Carnegie Corporation, already generous donors, have promised a further sum of £20,000, provided that £30,000 can be raised from other sources, and it is calculated that a total of at least £50,000 will be necessary for further building and endowment purposes.

This year is remarkable for efforts to make London a worthy centre of imperial medicine and to bring members of our profession all over the world into closer relationship. The opening of the post-graduate school at Hammersmith by Their Majesties the King and Queen is to be followed by a meeting of the British Medical Association in Melbourne, which means that several hundred practitioners will be traversing and visiting several of the Dominions. We are afforded, therefore, the opportunity for making the advantages and needs of London House well known all over the Empire and for stimulating the profession and its friends, over-seas as well as at home, to unite in giving a great project all the support and encouragement it deserves.

Contributions may be sent to the Honorary Treasurer of London House, 54, Lombard Street, London, E.C.3.—We are, etc.,

DAWSON OF PENN.
HOLBURT WARING.
MOYNIHAN.
HORDER.
FREDERICK MENZIES.
W. LANGDON-BROWN.
E. FARQUHAR BUZZARD.

May 31st.

Treatment of Cerebro-spinal Fever

SIR,—I have read with interest Dr. J. M. Kennedy's article on the treatment of cerebro-spinal fever (*Journal*, April 13th, p. 756) and also the previous correspondence on this subject, and I should like to mention a method of treatment which I believe has a decided value: this is the simultaneous lumbar puncture and cisternal puncture. I have found this method gives better drainage; serum is introduced through the cisternal needle, at the same time fluid is drained off by the lumbar puncture. This avoids the increase of pressure otherwise caused by intrathecal injection of serum. The addition of a minute amount of potassium permanganate as a colouring agent in the first part of the serum is useful as an indicator, and if this begins to appear from the lumbar puncture needle this needle can then be withdrawn to avoid loss of serum. By this means larger doses of serum can be given, and yet the pressure at the end is lower than it is possible to leave with a single puncture at either site.

I am now preceding this injection of serum for this disease with a spinal wash-out, washing through with

saline from the cisternal to the lumbar puncture until the fluid is clear. I have repeated this wash-out on alternate days until the fluid is sterile. This would seem to produce at least a temporary improvement, but so far I have not had sufficient cases to warrant any dogmatic opinion on the final result. In children, if they are at all restless, I do this under paraldehyde (per rectum), using a drachm per stone body weight, and with local anaesthesia for inserting the needles.

With the persisting high death rate from this disease I think the cisternal puncture is justified, and also that in severe cases, at least, the spinal wash-out is worth the risk. I prefer to use a hollow needle attached to a syringe, and by keeping a negative pressure fluid appears as soon as the subarachnoid space is reached. Practice in the technique of cisternal puncture is easily obtained on the cadaver, and if done very shortly after death cerebro-spinal fluid can be obtained. If a post-mortem examination is performed later the medulla can be examined for any sign of damage, and reinsertion of the same needle to the same extent (previously marked) will show just how far the needle penetrated. In a number of such punctures on the dead body, in which I have had the opportunity to examine the brain later, I have not been able to find any damage. Nor have I met with any untoward result in cisternal puncture on the living patient in the rather limited number I have done. In my work in a remote part of China we only see occasional cases of this disease, and other factors, such as delay in bringing the case, refusal to allow lumbar—let alone cisternal—puncture, and sometimes the shortage of sufficient serum in the case of an epidemic, make it almost impossible to collect any useful statistics, and I should be interested to hear if any workers at home have proved these methods to be of value.—I am, etc.,

Shanghai, May 11th. L. A. H. SNOWBALL, F.R.C.S.Ed.

Acute Tonsillitis

SIR,—The excellent paper in your issue of May 25th by Dr. F. E. Camps raises some points for discussion.

Many observers will agree that the conventional acceptance of scarlet fever as a clinical entity rests upon a shaky foundation. It has been recognized for some years that the streptococcus of scarlet fever cannot be differentiated satisfactorily from other haemolytic streptococci, and that there are many streptococcal infections which, commencing as some local lesion, may produce nephritis and erythematous skin eruptions followed by desquamation. At the moment there are indications that the profession at large is inclined to accept haemolysis as the criterion of toxicity, a criterion which is demonstrably unsound. I have on occasion even heard the matter discussed from the totally incorrect assumption that the haemolysin is identical with the exotoxin.

Dr. Camps makes no mention of septicaemia as a sequel. It is not uncommon, and, provided immunological treatment is adequate and, above all, given at the earliest possible moment, the prognosis need not be one of despair. I also use the brand of antiserum mentioned by Dr. Camps, and I prefer to combine it with the antitoxin, but the dosage necessary is far greater than that used by him for other complications and sequels. May I point out in passing that with any serum one large dose at once is always more effective than two smaller doses given at intervals.

I cannot agree that in the face of the possibility of losing the case the risk of acute anaphylaxis or of serum sickness is a legitimate ground for withholding serum therapy. One can always deal with the matter if it arises: I believe that the precautionary procedure generally followed at present is one I described in the *Practitioner* some years ago. But the question of expense is undoubtedly a factor in determining the line of treatment. On examining some past case records I find that the average cost of serum for the successful treatment of a case of septicaemia is about £6. It is regrettable, but the choice lies between immunological treatment and liq. ferri perchlor. with quinine or some such other remedy, which will ensure a fatal issue with the minimum of expense.—I am, etc.,

C. E. JENKINS, M.R.C.S., L.R.C.P.

Manchester, May 28th.

Streptococcal Infections

SIR,—Arising out of a question asked by me in Parliament on May 13th, reproduced with the reply of the Ministry of Health in your columns on May 18th (p. 1057), I have received the following letter from a physician of the highest repute, and I comply with his request that I should address myself to you.

In to-day's copy of the *British Medical Journal* there appears a report on the cattleman detained at the Cippenham Isolation Hospital. The matter seems to me to be worthy of further publicity. It is certainly important. There is a certain amount of evidence that streptococcal infection in a midwife can cause puerperal fever. A midwife might possibly be not allowed to practise by a medical officer of health if bacteriological examination showed haemolytic streptococci to be present in her nose or throat. The evidence is not agreed to by all authorities by any means. The important point is that people's living may be taken away on what cannot be regarded as conclusive clinical evidence. This applies to the cowman (presumably), and also to the similar case of midwives. Personally I think the matter touches upon the freedom of the subject, and you should press for further inquiry. It is absurd to say there is no necessity for further inquiries, seeing that haemolytic streptococci are prevalent in the noses and throats of the whole population. Could you not write to the *British Medical Journal* giving full details of the scientific and clinical evidence?

Yours faithfully,
M.R.C.S., L.R.C.P.

I am unable to give further details, but may observe that, according to my information, the "epidemiological" evidence referred to by the Minister in his reply to me was negative or irrelevant. Two points of importance appear to me, as a layman, to arise.

1. Is the existence of haemolytic streptococci in the nose or throat proof that a man is suffering from "a dangerous infectious disease," within the meaning of the Public Health Acts? If so, should all such persons be isolated for the benefit of those who are not demonstrably harbouring these organisms, and at whose expense; or should only those persons be isolated who are handling food or coming into proximity with members of the public—for example, waitresses, conductors, schoolteachers, nurses, and doctors?

2. Is it possible to deduce from the simple examination of a swab that there is, of necessity, any connexion between the presence of streptococci in the throat of one handler of food and a contemporaneous epidemic? Is it not necessary to adduce evidence on this score before inviting a magistrate to commit a man to confinement in a hospital for infectious diseases, where he may acquire fresh infections and must at the same time be deprived of the means of livelihood—a most serious matter. It will be borne in mind that, according to the Cattle Diseases Committee's report, milk-borne epidemics of scarlet fever are very rare, and that the incidence of epidemic scarlet fever suggests the presence of other factors. It is further known that scarlet fever has been prevalent in the Home Counties, but has nowhere else been ascribed to milk.—I am, etc.,

House of Commons, May 26th. ARNOLD WILSON.

Gastrectomy

SIR,—In the interesting discussion on gastrectomy which has followed Mr. W. H. Ogilvie's paper there is one dangerous proposition which has passed unnoticed. Dr. Hurst suggests that one of the causes of failure of gastro-jejunostomy is a severe gastro-jejunitis on both sides of the anastomotic line, with or without superficial erosion. "This condition," he says, "cannot be recognized with the *x* rays," but only by the "inspection of the anastomosis in the course of an operation. . . . If partial gastrectomy is performed *on the clinical findings* [the italics are mine] the true nature of the condition is discovered and the patient is cured."

I can scarcely imagine a more dangerous or pernicious teaching. It takes us back to the dark ages when gastro-jejunostomy was performed on clinical symptoms without any demonstrable evidence of ulcer, with results that put back the progress of gastric surgery for several years. Surgeons are sometimes said to be bloodthirsty, but I trust that to-day not even the most bloodthirsty would perform any gastric operation, let alone a partial gastrectomy, in the absence of a demonstrable organic lesion. It is indeed remarkable that such a suggestion should come from such a protagonist of medical treatment as Dr. Hurst, for surely if, as he maintains—and in my judgement rightly—a gastro-jejunal ulcer may heal under medical treatment, *a fortiori* a jejunitis or erosion should yield to medical treatment.

As to the major issue whether gastrectomy is a legitimate or desirable treatment for duodenal ulcer, Lord Moynihan has stated the case with such cogency and clarity that there is little more to be said. Gastro-jejunostomy is a highly satisfactory operation if performed with the "gentle touch," but only after careful and adequate medical treatment and followed by *prolonged* careful dieting. It may be pertinent to point out that neither absence of symptoms nor absence of a niche radiographically is evidence that an ulcer is healed. Many times I have operated on patients supposedly cured by medical treatment, and yet have found a large open ulcer. This truth is based on the evidence of surgical sight, and not on that of radiological faith.

For the sake of the credit of British surgery let us hope that we shall see the vindication of the poet's prophecy, "Truth, crushed to earth, shall rise again."—I am, etc.,

London, W.1, June 1st. HERBERT J. PATERSON.

The Osteopaths Bill Inquiry

SIR,—I do not hope to convince Sir Morton Smart, but I do hope that your readers generally will not be misled by his views on osteopathy. According to him, the osteopaths in practice are just as good as we are; in fact, their *practice* is identical with what we call manipulative surgery, and their results are as good; the only difference being that they have a little mental kink as to "how it works." This is sheer nonsense. The fact that certain "modern osteopaths" have found it expedient and profitable to go outside the scope of osteopathy, and to practise also genuine manipulative surgery, does not make osteopathy identical with manipulative surgery. A coal-heaver may manipulate a knee-joint and may effect a cure, but that does not make coal-heaving identical with manipulative surgery. Of course, I know that the basis of osteopathic treatment is manipulation; but it is manipulation of the spine, and not of the spine *and other joints*. Even the osteopathic manipulation of the spine is not the same manipulation of the spine that would be performed by any reputable orthopaedic surgeon, and it does not produce the same results.

I repeat that osteopathy has nothing whatever to do with manipulative surgery as that term is rightly used to-day. It is a fraud both in theory and in practice. If the medical witnesses at the recent inquiry had been able to grasp this elementary truth, if they had nailed the osteopaths down to osteopathy and nothing but osteopathy, and if they had refused to discuss the irrelevant question of manipulative surgery, they could have given osteopathy a knock-out blow in the first round, and they would not have left a widespread impression in the public mind that the medical profession has won an academic discussion on points against a weaker opponent. The public does not care a rap about rival medical theories. It is willing to recognize anyone who will "deliver the goods." Sir Morton Smart, in identifying the practice of osteopathy with manipulative surgery, simply gives the case away with both hands to the osteopaths, and paves the way for the reintroduction of the Osteopaths Bill.—I am, etc.,

London, W.1, May 28th. A. S. BLUNDELL BANKART.

SIR,—I refrained from troubling you with an answer to a recent letter in the *British Medical Journal* by Sir Henry Brackenbury, but the continued correspondence on the comparison (or contrast—according to the point of view) of manipulative surgery with osteopathy induces me to try to clear the matter up.

It is true that every daffodil is a narcissus, but every narcissus is not a daffodil. It is equally true that every osteopath is a manipulative surgeon, but every manipulative surgeon is not an osteopath. The public do not have any difficulty in distinguishing them. They do not go to orthopaedic surgeons for deafness, asthma, migraine, neuritis, constipation, enuresis, epilepsy, insomnia, bronchitis, duodenal ulcer, pleurodynia, menstrual disorders, neurasthenia, and a host of other medical conditions.

Mr. Blundell Bankart would not have made a good witness. To judge by his letter published on May 11th (p. 999), superior prejudice would destroy the value of any evidence he gave. It is one thing to write statements in a friendly *Journal*, and quite another thing to substantiate statements in a witness-chair on oath.

May I correct some misconceptions in Sir Morton Smart's letter published on May 25th (p. 1095)? First of all, there is no prescriptive right in physiology or pathology. I don't suppose a knee-joint knows whether it is being manipulated by a gifted bone-setter, a dexterous osteopath, or a distinguished orthopaedic surgeon. Let us be fair about it. He is entirely wrong when he writes that "osteopathic manipulations were originally confined to the spine." The chiropractors could keep him right on that point. Still's original words were: "Illness is caused by the fact that something in the organism has been shifted slightly out of place, especially in the bony system, and most particularly in the spinal column" (1874). The "something out of place" does not need to be something bony, it does not need to be something in the spinal column. Yet it is the osteopathic bony spinal lesion which is the essence of the osteopathic factor in the aetiology of disease. This lesion is an acute or chronic joint strain, with or without deviation from the normal of the relative position of the bones involved, which deviation, if present, does not amount to dislocation. Mobility is altered from the normal—it is either decreased or increased. It is characterized (Wallace Pearson) by:

"1. An improper venous-arterial balance producing a relative acidosis.

2. The lowered alkalinity becomes a chemical stimulation to the colloidal structures to take on additional water-producing oedema.

3. Oedema being characterized by an increase in the water content within definite cellular limitations, there must result pressure.

4. Pressure from the oedema disturbs the capillary function and permits oozing of the capillary content into the tissue spaces, producing haemorrhage.

5. The exudation of this material, foreign to the tissue, sets up a protective mechanism, eventually demonstrating itself in fibrosis.

The structures supplied by the nerves passing through the area of osteopathic pathology will have in themselves all the above phases of abnormality (providing the character of the tissue permits of such changes), and in addition will show lowered tensile strength, lowered leucocytic activity, lowered proteolytic activity, degenerative changes, round-cell infiltration.

The osteopathic lesion is a potent factor in the alteration of the normal sympathetic-parasympathetic balance."

Osteopathy depends on no pseudo-science. The spinal lesion is a hitherto unrecognized factor in disease. It needs nothing more than the physiology of Sherrington for its explanation; nothing more than academic pathology for its results; and nothing more than osteopathic manipulation for its removal.—I am, etc.,

W. KELMAN MACDONALD, M.D., D.O.

Edinburgh, May 30th.

Conservative Treatment of Acute Pyogenic Infections

SIR,—I was very much interested to read in the *Journal* of May 11th the article by Mr. Charles Donald on "The Conservative Attitude in the Treatment of Acute Pyogenic Infections." As a general practitioner, having been instructed in the orthodox method of the treatment of such infections as carbuncles, boils, etc., I soon found out that early incision was useless, and also had its inconvenience in requiring anaesthetics, etc.

In the early stages of carbuncles and boils the application of heat in any form—for example, antiphlogistine—will soon bring to the surface a fluctuating area pointing with pus. This can be opened gently or the opening enlarged if it bursts by itself, with no extra pain. Once pus has been struck the application of frequent hot hypertonic salines alternating with lint saturated with glycerin (for its antiseptic and hygroscopic properties) will soon bring forth more pus and sloughs. With daily careful toilet and removal of pieces of slough the centre of the carbuncle usually sloughs away, and then a big central slough can be removed. A deep crater-like cavity is now formed, and it is surprising how quickly this fills up with granulation tissue and is covered over by skin under the above conservative treatment, with little disfigurement to the port of infection. In the later stage, when most of the pus has come away, some antiseptic ointment can be used.

I was pleased to know that such a high authority as Mr. Charles Donald practises this conservative method.—I am, etc.,

L. B. SHEINKIN, M.B., B.S.

Highbury Hill, N., May 27th.

Examination of Tuberculosis Contacts

SIR,—From the interesting correspondence on this subject it might be inferred that the notion of an inherited susceptibility or lack of resistance to the disease had been wholly superseded. Opinions still differ widely as to the practical value of the examination of contacts. But, according to such an authority as Karl Pearson, the inheritance factor is more important than the infection factor in the class of the population over which the tuberculosis officer expends most labour. I know of many instances of so-called "family tuberculosis." Neither parent had shown any symptom of the malady, but one child after another has developed tuberculosis, though they had scarcely known a common home. There are also the cases in which a parent with closed tuberculosis appears to have transmitted the tendency to disease.

In reference to Dr. F. E. Gunter's important contribution (June 1st, p. 1144), we must all agree that attainment of the age from 15 to 29 years is the crucial factor, and that underweight is important. But I would add the caution that overweight is no safeguard against tuberculosis. Out of eighty applicants for life insurance who were accepted with a loading solely on account of overweight, three died of tuberculosis. We are all familiar with the patient who, under sanatorium treatment, goes from the extreme of underweight to that of overweight, and who presents an inherent fault of metabolism. Altogether the series of letters published emphasize, I think, the fact that the early diagnosis of tuberculosis rests primarily with the general practitioner.—I am, etc.,

Norwich, June 1st. F. W. BURTON-FANNING.

SIR,—Dr. Ernest Ward (June 1st, p. 1145) asks how long I "served as whole-time tuberculosis officer engaged in the home examination of contacts." The answer is three years. Dr. Ward believes that if the tuberculin tests were done on all contacts "some 10 per cent. positive reactors [would] become negative within three to five years." Here and now I ask his authority for that statement. It is news to me. As regards the value of tuberculin and B.C.G. my answer is that if Dr. Ward had ever used tuberculin he would know that immunity may be raised a millionfold. In regard to Calmette's B.C.G. Dr. Ward should read the report of the Pasteur Institute.

As to *x* rays, Dr. William Stobie[1] of Oxford has given the medical profession, including Dr. Ernest Ward, a recent and salutary warning:

"The *x*-ray room is so fascinating, and so saving of time and endeavour, that there is a danger that future generations of medical students will lose much of the clinical sense of their predecessors. As far as tuberculosis of the lungs is concerned, there is still ample justification for the encouragement of the older methods of examination."

The point of this controversy about examination of contacts is quite simple: if a thing is worth doing it is worth doing well.—I am, etc.,

Kensington, W.8, June 1st. HALLIDAY SUTHERLAND.

SIR,—Dr. Halliday Sutherland appears to find Dr. Ward's article "sorry reading," but I can assure him that many members of the tuberculosis services, who are striving to develop efficient schemes for the prevention and treatment of tuberculosis according to our present knowledge and conception of the disease, thought it very encouraging, and found Dr. Sutherland's letter very sorry reading indeed. Everyone must admire the pioneer work of Sir Robert Philip in Edinburgh, yet we must remember that much has been learnt of the nature of tuberculosis since 1887, and surely we should incorporate the experience gained in formulating our schemes at the present time.

It is true that painstaking and time-consuming examinations, including the use of tuberculin, *x* rays, etc., can often definitely establish that infection has taken place in a child, and it is found that 80 to 90 per cent. at least of contact children have been infected; but experience shows that an almost negligible number develop active disease in childhood, although more do so when they reach adult life. Of course we all desire to prevent infection passing into active disease, but I do not think that many of us believe that specific resistance can be increased by the use of tuberculin, and many of us fear that the raised allergy produced thereby may be an actual danger. The child's general resistance should be built up as far as possible by improvement of environment, including institutional treatment where required; this is bound to improve

[1] *Med. Press and Circ.*, April 24th, 1935.

the present and future general health, but I am not convinced that it will materially alter the chances of activation occurring later. I do not believe that we have at our disposal any means of foretelling which particular case of infection is likely to advance ; and as so large a number of contacts become infected it would seem reasonable to improve the surroundings for all contacts, and for the tuberculosis officer to concentrate his efforts on discovering early signs of activation, to be suspected chiefly when the child contact of the past is reaching adult life.

Dr. Wright's experiences seem unfortunate, but I think it is hardly fair to suggest that the tuberculosis officer refers the case to the radiographic department ; rather does he seek the help of *x* rays in forming his opinion, either as to diagnosis or as to the appropriate treatment. Perhaps in the area where his experience lies the tuberculosis officer is handicapped by a shortage of beds. If so, he cannot but make a selection according to his judgement of the cases needing treatment and isolation most urgently, but I can assure Dr. Wright that in County Antrim any case needing treatment or having a positive sputum would be transferred from a general hospital to tuberculosis wards within a few days.—I am, etc.,

Belfast, June 3rd. C. O. S. BLYTH BROOKE.

SIR,—It has fallen to me, as pathologist to a children's hospital, to examine post mortem many cases of tuberculosis in children. The usual cause of death is tuberculous meningitis ; in about 70 per cent. the primary lesions are pulmonary ; and many of the children are "home contacts." I have been greatly impressed by the following facts:

1. In many cases there is no history of ill-health until a few weeks before death ; quite often the first symptoms are those of meningitis. I cannot agree with Dr. Ward's attempt to justify the exclusion of child contacts from examination by the claim that "children of tuberculous families that are causing anxiety are readily brought to our notice in other ways." Too often they do not begin to cause anxiety until it is much too late to do anything.

2. The lung lesion is very often a small nodule which produces no physical signs and cannot be detected in an *x*-ray film, even when one goes back to the film and examines it in the light of post-mortem findings. Only when these small foci are calcified are they reasonably likely to be visible, and then they are less prone to be dangerous. Even large tuberculous glands in the thorax may show nothing in a film. These facts justify Drs. Halliday Sutherland and Dixon in their insistence on the necessity for tuberculin tests on child contacts. The fact that a proportion of reactors will never develop active disease is no argument against the use of the test. If every child reactor were recognized and treated as a potential case of tuberculosis the number of those who develop active disease would probably decrease.

3. In my experience it is rare to find at necropsy, at least in the younger children, tuberculous lesions which are not active. In view of this I feel that Dr. Ward's contention that "the existence of a single lesion more often than not implies no danger" is dangerous doctrine in the case of children. Does not almost all tuberculosis begin as a single lesion?

—I am, etc.,

Edinburgh, June 1st. AGNES R. MACGREGOR.

Selenium in the Treatment of Cancer

SIR,—The letters on this subject by Mr. E. Watson-Williams and Dr. A. T. Todd furnish such a comprehensive answer to Dr. Webster's statements that there is fortunately little I need say in reply. In my original letter I referred to Mr. Watson-Williams's work and publications, but these references, together with some other matter, were cut out owing to considerations of space. I take this opportunity of acknowledging the help Mr. Watson-Williams has afforded me by private correspondence.

One sometimes hears the remark made by people who should know better that "selenium, like the other heavy metals, is highly toxic," by which they mean to class it with lead, copper, etc. As Dr. Todd has pointed out, selenium is not a metal, but an element of the sulphur group. It can, in fact, replace sulphur in many chemical combinations. One of its allotropic forms is sometimes referred to as "metallic selenium," and this may have given rise to the false idea that it could cause cumulative poisoning after the manner of metals.

I suspect that Dr. Webster's dialectical ire has been aroused not so much by the question of selenium as by the fact that the *x*-ray dosage given with it (as advocated by Dr. Todd) is "small." But, as regards prophylactic *x*-ray treatment in breast cancer, it is quite possible to use more orthodox methods in the first place, provided they are not so severe as to preclude the use of any further *x*-ray treatment. Professor Pfahler's results in Philadelphia have been obtained by treating patients for, as a rule, not more than three months after operation (he treats before as well, if he gets the opportunity). By this procedure he doubles the number of patients surviving after five years, as opposed to operation alone. There is nothing to stop anyone from using Pfahler's method and, after a short interval, following up with a prolonged course of selenium plus *x*-ray treatment. Dr. Todd lays no claim to be a radiologist, and is anxious that radiologists should try to get even better results than he has so far attained. Speaking as a radiologist, I can say that for many years we have been getting results in advanced malignant disease which are, for a time, perfect. For instance, a patient suffering from inoperable carcinoma of the uterus may be relieved of all symptoms—pain, discharge, etc.—for months, sometimes for years. Can we not try out Dr. Todd's method in an effort to hold what we have gained by more orthodox means?

In conclusion, I wish to say the object of my letter was to lay stress upon the necessity of prophylactic treatment in all cases ; and to show that anyone anxious to try out Todd's methods need not be deterred by fear of cumulative toxic effects from selenium. The smoke and din of controversy should not be allowed to obscure the great truth that the time to treat secondaries is when none are evident.—I am, etc.,

London, W.1, June 1st. F. HERNAMAN-JOHNSON.

League of Nations Report on the Treatment of Syphilis

SIR,—Since the publication of *The Quarterly Bulletin of the Health Organization of the League of Nations* (vol. iv, No. 1, March, 1935) I have repeatedly been asked why it is that among the twenty-nine British clinics which submitted their records the name of no Manchester or Salford treatment centre appears. For Manchester I cannot speak ; but so far as Salford is concerned the reason is that no invitation was issued to it. This explanation seems to be necessary in view of the statement made in the report that: "In each of these countries the dermatological and venereal disease clinics were appealed to for their support, and a large majority readily responded." It might be thought on looking at the table of British clinics that the Salford municipal clinic—one of the largest in the country—refused to take part in the investigation. I want to make it perfectly clear that not only was this clinic not asked to submit its records, but it did not receive any official intimation that such an inquiry was in progress. The omission of the Salford

municipal clinic is all the more remarkable because, with the exception of one other, it is the only treatment centre in Great Britain where the alternating and continuous method of therapy is in operation.—I am, etc.,

Salford, May 30th. E. T. BURKE.

Treatment of Warts

SIR,—He is a bold man who describes the cure for warts but a foolish one who bases his conclusions upon two cases. I tried and abandoned elastoplast for warts some years ago, and I think the explanation of Dr. McAusland's success lies in the influence of his personality over his two patients. Psychotherapy is the most ancient of all treatments for warts, and a very successful one.

Incidentally elastoplast, a most valuable preparation, does not contain gelatin.—I am, etc.,

Leeds, June 3rd. JOHN T. INGRAM.

Compulsory Elementary Education

SIR,—In your very kind review of my *Fifty Years in Public Health* you state that the date when elementary education became compulsory should be 1870, not 1880. Your readers may care to learn the correct sequence of events.

In 1870 this compulsion was to be applied to those attending the newly established Board schools if the School Board decided to enforce it.

In 1876 a similar compulsion was imposed in respect of all elementary day schools, and a duty was imposed on parents to cause each child to receive efficient elementary instruction.

In 1880 attendance at school was made compulsory on all children, and not merely on those who habitually failed to attend.

In 1891 fees were abolished.

—I am, etc.,

Worthing, June 3rd. ARTHUR NEWSHOLME.

The Services

HONORARY SURGEON TO THE KING

Surgeon Rear-Admiral H. R. H. Denny, C.B., M.R.C.S., L.R.C.P., D.P.H., has been appointed Honorary Surgeon to the King, from May 8th, in the vacancy created by the retirement of Surgeon Rear-Admiral W. W. Keir, C.M.G., M.B., Ch.B.

INDIAN MEDICAL SERVICE

The annual dinner will be held at the Trocadero Restaurant, London, on Wednesday, June 19th, at 7.15 p.m. Major-General E. A. Walker, C.B., K.H.S., Director of Medical Services, India, will preside. Officers can arrange to sit near their friends, as separate tables to seat eight will be provided. Tickets from the joint honorary secretary, Sir Thomas Carey Evans, Hammersmith Hospital, Ducane Road, W.12.

DEATHS IN THE SERVICES

Lieut.-Colonel Richard Edward Ricketts Morse, R.A.M.C. (ret.), died at Cheltenham on April 14th, aged 78. He was born at Newnham, Gloucestershire, on October 23rd, 1856, was educated at Cheltenham College and at Guy's Hospital, and took the M.R.C.S. in 1879 and the L.R.C.P.Ed. in 1880. Entering the Army as surgeon on February 5th, 1881, he became lieutenant-colonel after twenty years' service, and retired on February 18th, 1911. He served in the Egyptian War of 1882, receiving the medal and the Khedive's bronze star; and in the Sudan campaign of 1889, was present at the actions of Arguin and Toski, was mentioned in dispatches in the *London Gazette* of September 6th, 1889, and received a clasp to the Egyptian medal and the third class of the Medjidieh. He rejoined for service in the war of 1914–18, from August 13th, 1914.

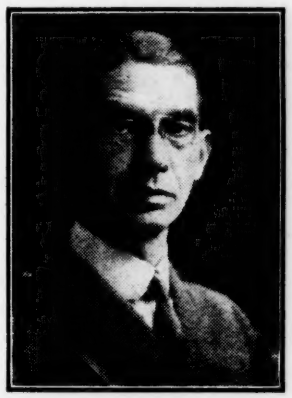
Obituary

FRANK ATCHERLEY ROSE, F.R.C.S.

Late Surgeon, Throat Department, St. Bartholomew's Hospital.

We regret to record the death, on May 30th, of Mr. Frank Rose, who was widely esteemed as a skilled diagnostician and surgeon in the field of diseases of the throat and nose.

Born in 1873, Frank Atcherley Rose was educated first at Bedford Modern School and at Cambridge, where he was a scholar of St. John's College, and gained first-class honours in the Natural Sciences Tripos. In 1895 began his long connexion with St. Bartholomew's Hospital, his student career being distinguished by the winning of the Shuter scholarship in the next year. He obtained the diplomas M.R.C.S., L.R.C.P. in 1899, graduated M.B., B.Ch.Camb. in 1902, and proceeded F.R.C.S. in 1903. After holding an appointment as house-surgeon for a year, he began to specialize in affections of the throat and nose, and was active in the department for the treatment of these diseases which was then developing at St. Bartholomew's. He was also appointed surgeon to the Throat Hospital in Golden Square and to the out-patient department for diseases of the throat and ear at the Royal Northern Hospital, and for some years he was a demonstrator of pathology in the medical school of St. Bartholomew's Hospital.



Although the laryngological department at Bart's had existed in a very small way for some years before 1878, it received an impetus then from the interest taken in it by Sir Lauder Brunton. In 1880 Sir Henry Butlin began his twelve years' connexion with it, during which, with the aid of Dr. de Haviland Hall, he built up an organization second to none in London; his successors in charge of the department were Sir Anthony Bowlby, Sir D'Arcy Power, and Mr. Douglas Harmer. After a short interregnum, during which Rose and Dr. Jobson Horne were in charge, a complete reorganization was effected, and the new department for diseases of the throat and nose was placed under the joint care of Mr. Harmer and Rose, who undertook to specialize entirely in this work. Beds and a small operating theatre were allotted to it jointly with the new aural department, and it thus became an integral part of the hospital. On the resignation of Mr. Harmer, Rose became surgeon in charge of the department; the two had helped to bring into being its extension in 1907, when accommodation was found for it in the new out-patient department. Waiting-rooms were provided on the second floor; there was an operating theatre with a sterilizing and instrument room, and a dark room for transillumination of the cranial sinuses.

Frank Rose held a commission in the R.A.M.C.(T.) during the war, and served on the *à la suite* staff of the 1st London Territorial General Hospital. He was an ex-president of the Section of Laryngology of the Royal Society of Medicine, and in 1930 was president of the Laryngological Society. In 1912 he married Marian Elisabeth Darling, daughter of Dr. A. C. E. Harris of Birkenhead; she died in 1919, leaving a son and daughter. He was a member of the British Medical Association for thirty years.

Mr. JOSEPH CUNNING writes:

I first met Frank Rose when he was Butlin's house-surgeon. That the great man showed considerable respect for his opinion was what first attracted my attention. This respect lasted the whole of Butlin's life, for it was to Rose he came for treatment in his last illness. Later, when I was senior R.M.O. at the Royal Free Hospital, Rose and I found ourselves dining at the same Italian restaurant at King's Cross on Sunday evenings, and ever since then have remained firm friends. He was at that time demonstrator of pathology at St. Bartholomew's with Sir Frederick Andrewes. When he decided to embark upon surgery he realized that the advice given him at Cambridge—namely, that the First Fellowship examination was not worth bothering about—was wrong. Nevertheless, while still doing whole-time work in the pathological department, Rose passed in some absurd minimum time. When about to enter for the Final Fellowship he thought he ought to be coached, as he had little time for reading. I sent him to T. P. Legg, who was easily the best coach at that time. When next Legg came to hospital he said, "What have you sent Rose to me for? He knows as much surgery as I do." He was one of those fortunate people who did not have to read and read laboriously and hope to remember most of it. Any subject he took up he mastered, and it was fixed in his brain for ever.

He began the study of diseases of the throat, and later was appointed to the staff of Golden Square. This was followed by the assistant surgeoncy to the throat department of St. Bartholomew's. Slowly but steadily he made his mark as a laryngologist. Accurate thinking (and he would not tolerate otherwise), an extremely logical mind, and a high degree of operative skill made him one of the leaders in his branch of surgery. His opinion was highly valued by many other throat surgeons when they wanted a consultation on their own cases—the best tribute one surgeon can pay another. He was a hard-working secretary and afterwards president of the Laryngological Society. He retired from St. Bartholomew's some years before his time was up, and finally retired from private practice in June, 1931, so that he might travel round the world.

Rose played all games with skill. He rowed in his college boat at Cambridge and at that time was a good lawn tennis player. Later he took up golf, and was a very reliable six handicap. He was equally good at billiards and chess. He married, in 1912, my wife's cousin, Marian Darling Harris. An ideally happy union was tragically terminated by the 1918–19 influenza epidemic, leaving him with a young son and daughter, to whose bringing up he ever afterwards devoted himself. When Rose made a friend that friend was devoted to him for life, and could rely upon him for absolute loyalty, sympathy, and help in any trouble. Although he never sought popularity he has left a large number of friends and others who admired his character to mourn their loss. We were all gainers from our friendship with Rose.

[The photograph reproduced is by Elliott and Fry, Ltd.]

W. W. SHACKLETON, M.D.

Medical Officer, Royal Masonic School for Boys

Dr. William Webb Shackleton, who died on June 1st, aged 67, had been in practice at Bushey, Herts, for forty-two years. He was born at Ballitore, Co. Kildare, the son of Abraham Shackleton, of a very old Quaker family, which settled in Ireland at end of the seventeenth century. He was educated at Bootham's, York, and at Trinity College, Dublin, where he obtained his B.A. in 1889, and in the same year his M.B., B.Ch., and B.A.O. Following this he went to Vienna to study. After an assistantship in Essex and several sea voyages as ship surgeon he went to Bushey in 1893, having taken his M.D. that year.

He will be sadly missed, for, in addition to being very highly esteemed as a general practitioner, he had the most delightful personality, which endeared him alike to his patients and his professional colleagues. He had been for many years medical officer to the Bushey Heath Hospital; and had been Poor Law medical officer to Bushey for many years; also to the St. Pancras Schools at Leavesden from 1894 until 1903. There he obtained unrivalled experience in the observation and treatment of the more obscure eye diseases, and of diphtheria, both endemic and epidemic, in connexion with which he published in the *Lancet* in 1906 his observations on the prophylactic use of anti-diphtheritic serum, then in its infancy. He had been the medical officer to the Royal Masonic Institutions for Boys ever since the schools moved to Bushey. His work in this capacity was to him the most enjoyable part of his practice, and the boys of the Masonic schools and the board of management owe him a deep debt of gratitude for his untiring services on their behalf.

Dr. Shackleton was a member of the British Medical Association, a past member of the Hertfordshire Panel Committee, and a past president of the West Herts Medical Society. He leaves a widow, a son, and a daughter; his son has been in practice with his father during the last few years.

"H. L." writes:

The death of Dr. Shackleton has deprived the medical profession of an able practitioner and a lovable man. His charm of manner, his kindness, cheerful sympathy, and keen sense of humour endeared him to a wide circle of friends and patients, but none will feel his loss more keenly than those with whom he came in contact at the Royal Masonic School for Boys at Bushey, where he had been medical officer since 1903. Here his special knowledge and skill in diagnosis and treatment were of the greatest value, and the excellent health of the school has been largely due to his foresight, wise counsel, and unremitting care. It was delightful to see him at work among the boys, to watch his skilful management of them, and appreciate the wise understanding borne of a rich experience which never failed to win their confidence. They have lost a loved and trusted friend. His name will long hold an honoured place among those who have worked for this great charity.

Dr. HENRY HABGOOD, who died at Clifton on May 24th, had been a member of the British Medical Association for fifty-seven years. Born near Bath in October, 1848, he was educated privately and at the London Hospital, obtaining the M.R.C.S. in 1875, the L.R.C.P. in 1884, and the M.D.Brux. in 1876. His first appointments were at the London Hospital, where he was medical assistant in 1874 and house-surgeon in 1876. From his youth he had been attracted to military service, and had been a member of the volunteers in Somerset from 1866 to 1870. Much of his later life was passed in Eastbourne, where he was medical officer to Princess Alice Memorial Hospital from 1886 to 1915, when he was appointed consulting medical officer. He resumed his military connexion, joining the Sussex Volunteers, and became surgeon colonel of the Sussex Territorial Artillery. He held the V.D., and was surgeon to the V.A.D. Hospital at Eastbourne during the war. Dr. Habgood retired in 1924 and lived for a time at Beckenham, returning eventually to Eastbourne. In addition to his medical and military interests, he found time for the study and practice of archaeology, music, and horticulture.

Medico-Legal

PRACTITIONER'S CLAIM FOR FEES

In the King's Bench Division, on May 30th and 31st, before Mr. Justice Mackinnon, Dr. John Precope of Inverness Terrace, W., claimed £367 10s. fees for professional services rendered to Mr. H. Martin Hofer of Mount Row, W., and also, at what was stated to be Mr. Hofer's request, to Lady Louise Montagu of Bourdon Street, W. It was stated on behalf of the plaintiff that Mr. Hofer was a man of considerable business importance, and by illness was incapacitated in December last from attending to business involving many thousands of pounds. For a week Dr. Precope attended him night and day. Further, on several occasions, at Mr. Hofer's request, he attended Lady Louise; he had to pose as confidant and friend, because she was on the verge of a nervous breakdown.

The main defence was that Dr. Precope had no authority to render the medical services for which he claimed, and that the charges were excessive. Mr. Hofer, in evidence, said that he could not remember asking Dr. Precope to look after Lady Louise, and after the doctor had been called in to see him on December 7th his visits were purely social. When the doctor had mentioned that his fee would be fifty guineas a day he told him he was crazy.

Mr. Justice Mackinnon, in giving judgement, said that Dr. Precope had not established his claim in regard to Mr. Hofer having contracted to pay the doctor's charges for attending Lady Louise Montagu, and as to the attendance on Mr. Hofer himself the question was as to the reasonable remuneration to which he was entitled. The judge was satisfied that Dr. Precope's account as to the time he had spent professionally with these patients was greatly exaggerated, or at least that it was longer than was necessary. He had included in his charges the time entailed in taking Lady Louise out to lunch or dinner on several occasions. Medical witnesses who had been called had suggested that for the professional services actually rendered twenty-one guineas would be a sufficient fee, but that seemed to the judge rather on the low side, and he thought forty-two guineas would be reasonable. It was mentioned that £50 had been paid into court on behalf of Mr. Hofer, and accordingly judgement was entered in favour of Mr. Hofer with costs after the date of the payment into court.

A PARTNERSHIP ACTION

Dr. X, a Lancashire practitioner, bought two-fifths of a practice belonging to Dr. Y for £1,400 in 1929. Last year he bought the other three-fifths for £1,556. In the original articles of partnership there was a covenant that if either partner retired he should not practise within a radius of five miles from the partnership address without the previous consent in writing of the other; this restrictive covenant was to apply for five years after the retirement. Dr. Y gave notice that he intended to retire after September 30th, 1934, and Dr. X agreed that, in spite of the covenant, Dr. Y should attend former patients within the restricted area who specially requested that he should attend them personally, and who informed him that they were not prepared to be attended by Dr. X or his partner instead of by Dr. Y. These attendances were to be on behalf of Dr. X's practice, and he was to take the fees and give one-third of them to Dr. Y, who was not to see more than a dozen of such patients.

In the early part of August, 1934, Dr. Y sent out from his house a circular which stated that after September 30th he was at liberty to attend any of his former patients who did not desire the services of Dr. X or his partner. Dr. X brought an action in the Manchester Chancery Court asking for an injunction to restrain Dr. Y from soliciting former patients of the partnership to become his patients. He also claimed damages for breach of an agreement to give introductions to patients during the last three months of the partnership.

The Vice-Chancellor, Sir Courthope Wilson, K.C., gave judgement on May 24th, saying that a clearer case of solicitation could not be imagined, and that he was quite satisfied it was a breach of the law, which required anyone selling goodwill to abstain from any acts which derogated from his grant and injured the goodwill. He granted the injunction with an inquiry as to the damages caused by the solicitation. He also found that Dr. Y had failed to give proper introduction to patients; Dr. X had made complaints and supplemental agreements had been made. To some extent there had been a breach of the agreement to introduce, and there would be an inquiry as to the damage resulting. Dr. Y was condemned in the costs of the action, and the costs of the inquiry were reserved.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The General Board has appointed the following examiners for the diploma in medical radiology and electrology, 1936: Part I: Mr. G. Stead, M.A., and Mr. B. L. Worsnop, Ph.D. Part II: Dr. H. Roberts, Dr. G. H. Orton, and Dr. E. P. Cumberbatch.

Dr. W. L. H. Duckworth has been reappointed reader in human anatomy for five years from October 1st, 1935.

At a congregation held on June 1st the following medical degrees were conferred:

M.D.—W. A. Lister, T. N. Parish.
M.B., B.CHIR.—G. Scott, G. E. Walker.
B.CHIR.—*C. G. Parsons, E. Sharp, P. A. Walford.
* By proxy.

At the congregation on June 1st the degree of M.A. (*honoris causa*) was conferred upon William Mortlock Palmer, M.D. Durh., F.S.A., who has for many years devoted himself to local antiquarian studies.

UNIVERSITY OF LONDON

Copies of the Medical Curriculum Conference Report (see *British Medical Journal*, May 18th, p. 1040) may be obtained from the secretary of the conference, University of London, S.W.7, price 1s. each, post free.

The following have been recognized as teachers in the subjects indicated. *St. Bartholomew's Hospital Medical College:* Dr. W. J. H. M. Beattie (obstetrics and gynaecology), Dr. R. C. Canti (pathology and bacteriology), Mr. R. S. Corbett (surgery), Dr. E. R. Cullinan (medicine), Mr. J. G. A. Fairbank (dental surgery), Mr. S. L. Higgs (orthopaedics), Mr. Kenneth Walker (venereal diseases). *Charing Cross Hospital Medical School:* Dr. H. A. Dunlop (medicine).

The following appointments have been made: Sir Holburt Waring as governor of the Imperial College of Science and Technology; Sir Ernest Graham-Little as member of the council of the London Society; and Sir Cooper Perry as representative of the University on the governing bodies of the National Training College of Domestic Subjects and the Battersea Polytechnic.

The Sir Henry Royce Research Fellowship of the annual value of £500, tenable in the first instance for three years with a possibility of renewal, recently founded (in the first instance for seven years) under the will of Sir Henry Royce for "research or the distribution of knowledge for the purpose of improving the health of, and preventing disease to, the human race," has been awarded to Dr. C. H. S. Harris. The subjects of the research to be undertaken by the Fellow are either the common cold, its nature, prevention, and cure, or influenza, its nature, prevention, and cure. Dr. Harris has chosen the latter subject for his research, which he will carry out at the British Post-Graduate Medical School. Regulations for the award of the Fellowship may be obtained from the Academic Registrar

Applications for the William Julius Mickle Fellowship must be sent in by October 1st. The Fellowship is of the value of at least £200, and is awarded annually by the Senate to the man or woman who, being resident in London and a graduate of the University, has in its opinion done most to advance medical art or science within the preceding five years, and has therein shown conspicuous merit. Further particulars may be obtained on application to the Academic Registrar.

UNIVERSITY OF LIVERPOOL

At a Congregation held on May 24th the Chancellor, Lord Derby, conferred the honorary degree of LL.D. upon the following, among others: Mr. Arthur Harden, F.R.S., emeritus professor of biochemistry in the University of London, Mr. Charles Thurstan Holland, Ch.M., F.R.C.S., and Mr. Nevil Vincent Sidgwick, F.R.S., president-elect of the Chemical Society.

UNIVERSITY OF WALES

The following candidates have satisfied the examiners in the examination indicated:

TUBERCULOUS DISEASES DIPLOMA.—Honoria Aughney, Elizabeth M. R. Garrigan, Dorothy M. James, R. A. N. McMath, Nora O'Leary, G. E. Ranawake, Kallakurchi Vasudeva Rao, Amarnath Sah, Mahmoud El-Sayed Salem, Dhirendranath Sanyal, Abdel Latif Hassan El Sayed.

QUEEN'S UNIVERSITY, BELFAST

The Senate of Queen's University has decided to confer the honorary degree of LL.D. upon Dr. T. G. Moorhead, Regius Professor of Physic in the University of Dublin, and the honorary degree of D.Sc. upon Dr. T. Carnwath, Senior Medical Officer in the Ministry of Health, London, and Colonel W. P. MacArthur, Deputy Director-General of the Army Medical Services since 1934.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—A. Aspinall, W. H. Bayley, W. C. Campbell, F. Hawking, H. N. Levitt, J. Mason, A. G. Sweetapple, R. L. Walmsley.

MEDICINE.—H. Burrows, E. H. E. Cross, R. N. Crossley, C. S. J. Dandekar, H. O. Dole, H. A. Kamel, B. S. Minden, J. C. Paterson, A. G. Sweetapple, G. W. Van Mentz.

FORENSIC MEDICINE.—N. A. Bicchieri, H. O. Dole, A. G. Sweetapple.

MIDWIFERY.—F. Brodahl, E. T. Garthwaite, W. J. Pinto, A. G. Sweetapple, P. A. Walshaw, J. L. Wredden.

The diploma of the Society has been granted to W. C. Campbell, E. H. E. Cross, R. N. Crossley, C. S. J. Dandekar, J. Mason, B. S. Minden, J. C. Paterson, A. G. Sweetapple, and J. L. Wredden.

The following candidates have been approved at the examination indicated:

MASTERY OF MIDWIFERY.—Marie Louise Pauline Crawford, Alice Barbara Field, Gwendolen Elizabeth Kaines, Mary Meta Mackenzie.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

In the House of Commons this week the Government of India Bill was read a third time. The Ministry of Transport Estimates were discussed. The second reading of the National Health Insurance and Contributory Pensions Bill was also due to be taken before the House adjourned for the Whitsuntide Recess.

The Unemployment Assistance (Temporary Provisions) (No. 2) Bill passed through committee in the House of Lords on June 4th, and the Restriction of Ribbon Development Bill through the report stage. On the same date the Lords concurred in the resolution passed by the House of Commons, that it was expedient that a joint committee of both Houses should be appointed to consider and report on measures for the better conservation and organization of water resources and supplies in England and Wales.

In the House of Commons, on June 3rd, the West Riding of Yorkshire Mental Hospitals Board (Superannuation) Bill was read a second time.

The Public Health (Water and Sewerage) (Scotland) Bill was introduced in the House of Commons by Sir Godfrey Collins on May 31st and read a first time. Its provisions are solely financial.

The Diseases of Animals Bill, which passed the House of Lords on May 30th, was read a first time by the House of Commons on May 31st. On May 30th the Lords inserted an amendment authorizing the Minister of Agriculture to make Orders relating to the importation of therapeutic substances.

The Fylde, Preston, and Garstang Joint Small-pox Hospital District Bill was read a first time in the House of Lords on May 30th.

The Superannuation Bill was read a third time by the House of Commons on May 30th.

On May 28th a meeting of interested parties at the House of Commons decided that Captain G. S. Elliston should ask the Minister of Health to receive, early in July, a deputation in support of the Medicines and Medical Appliances Bill.

Deaths from Anthrax

Mr. WILL THORNE, on May 29th, asked if the Postmaster-General could give any information on the death of a Post Office employee from anthrax. Sir KINGSLEY WOOD replied that a sorter was taken ill and died while on holiday. At the inquest the coroner found that death was due to anthrax, but that there was no evidence as to how the deceased had become infected. Sir Kingsley added that the deceased's duties did not bring him into contact with any likely source of anthrax, and there would seem no good reason to attribute his death to his employment. A claim on behalf of his dependants had been received, but on present information there did not appear to be ground for payment of compensation. A gratuity would be payable under the Superannuation Acts. There was no record of a similar case in the Post Office.

On May 30th, in a reply to Mr. Rhys Davies, Sir JOHN GILMOUR said that the information about recent deaths from anthrax at Chester and Hull did not suggest any greater precaution which could be taken at the ports. In neither case had the source of infection been established. Further inquiries were being made.

Price of Milk

Captain PETER MACDONALD asked, on May 29th, what considerations led to the arrangements between ice-cream manufacturers and the Milk Marketing Board enabling the former to obtain milk at specially reduced rates; and whether any progress had been made with the schemes for providing equally favourable rates for the hospitals. Dr. ELLIOT answered that the price of milk for use in the manufacture of ice-cream was 7½d. a gallon; provided that, unless the Milk Marketing Board otherwise agreed, the purchaser bought not less than a daily average of 500 gallons and utilized not less than a daily average of 300 gallons for manufacturing purposes. Experimental arrangements had now been made whereby ice-cream manufacturers unable to comply with these quantity conditions obtained supplies at rates slightly higher than 7½d. a gallon. Concerning the price of milk supplied to hospitals, Dr. Elliot had nothing to add to previous answers.

On the same date Mr. W. LEONARD asked whether hospitals in Scotland were entering into the second-year contracts for milk in ignorance of what they would have to pay. Mr. Leonard suggested that, in consequence, the use of Grade A tuberculin-tested milk might be eliminated by some hospitals. Sir GODFREY COLLINS said he hoped the latter suggestion would not develop. The Milk Reorganization Committee was investigating the supply of milk to hospitals. He had considered a report from a Consumers' Committee investigating the milk charges demanded from public institutions, and was grateful for the care with which it had prepared it. Any proposal requiring a marketing board to give special terms to selected classes of consumers could not be considered as an amendment to an existing marketing scheme, but would be examined in formulating a policy to follow the temporary measures for the milk industry under the Milk Act, 1934. In the meantime it was impracticable to ask the Scottish Milk Marketing Board to give effect to the committee's suggestions. Mr. LEONARD averred that the report of the committee asserted that the action of the Board in not according special treatment to hospitals was not in the public interest. He asked whether, if the reduction in charges were made, the Minister would ensure that it was retrospective. Sir GODFREY COLLINS said preference could not be given to one institution alone. The Consumers' Committee recommended that should be done, but the Scottish Milk Marketing Board at the moment had no power to single out classes of institutions for special treatment.

On June 3rd Captain P. MACDONALD asked the Minister of Agriculture whether the Milk Marketing Board had considered the possibility of arranging for the supply of cheap liquid milk to hospitals by means of a scheme whereby all hospitals within a given area undertook to combine to purchase a regular large daily quantity of such liquid milk; and

whether he would urge the Board to deal with this matter as one of urgency. Dr. ELLIOT said that the position with regard to the price of milk supplied to hospitals was explained in a reply which he gave on May 2nd. He was sure that the Milk Marketing Board would at all times be willing to consider any scheme for the bulk purchase of milk which would be to the mutual advantage of producers and purchasers. Any proposals, such as those which Captain Macdonald indicated, which the hospitals might wish to suggest should, therefore, be made direct.

Mr. T. WILLIAMS asked whether the Milk Marketing Board had the power within the existing schemes to sell direct to institutions such as hospitals on the basis of any figures upon which they might agree. Dr. ELLIOT said he understood that in some cases hospitals had already combined to purchase milk supplies at the lower rates applicable to milk supplies sold wholesale or in large quantities. Mr. Williams asked whether the Milk Marketing Board could sell direct to the institutions without retailers taking any part of the ultimate price. Dr. ELLIOT: Obviously that does not arise out of the question.

Voluntary Hospitals (Paying Patients) Bill

The report stage of the Voluntary Hospitals (Paying Patients) Bill was taken by the House of Lords on May 30th. On Clause 2—"accommodation for, and charges to, paying patients"—which opens with a proviso "notwithstanding . . . any prohibition or restriction imposed by or under any local Act," Viscount GAGE, for the Government, moved to add after "local Act" the words "being an Act relating expressly to the hospital." The House concurred in this drafting amendment. Clause 3—"provision for patients able to make some, but not full payment"—was altered to make the clause apply to patients unable to make sufficient payment to meet their maintenance as well as to those unable to pay fully for "accommodation, medical or surgical attendance and treatment." Lord LUKE asked if this covered the same charges as those specified in Clause 2—"for accommodation and maintenance including such medical and surgical attendance and treatment as is given by the resident staff of the hospital." Lord GAGE said this was so.

On Clause 4—"provisions for protection of existing trusts"—Lord Luke had four amendments on the paper. He said that Clause 4 (*b*) as it stood was based on the principle that, even if a hospital under the new powers given by the Bill had collected money which could be used to provide pay-beds and could with that money alter existing buildings to make additional space available, that additional space must be used for the sick poor for whom the buildings were erected under the original trusts, unless there was failure of the original trust or lack of funds or lack of demand. Lord Gage had already indicated that the Government would consider the contingency of an exchange where the hospital had buildings the trusts attaching to which did not allow the taking of paying patients, and also had other buildings. Lord LUKE said he proposed an amendment which would allow this without reduction of the facilities for ordinary patients. In some cases

"such an exchange was the best way of planning an extension of a hospital. One example was where new and improved nurses' quarters could be built out of money available for pay-beds and some of the old nurses' rooms could be converted into single wards for pay-bed patients. It would be obviously better in such a case to do this rather than to leave some of the nurses in the existing building and put the pay-beds in the new nurses' block. Such schemes, at hospitals which already had power to provide pay-beds, usually produced advantages for the ordinary patients. Improved accommodation for nurses benefited these directly. The additional beds reduced the proportional overhead cost per bed, thus increasing the capacity of the hospital to provide for the sick poor. The pay-beds provided accommodation for the 'new poor,' the black-coated poor—and possibly for a smaller number of those who could afford to pay a price that would leave the hospital a profit."

Viscount GAGE said the Government accepted the amendments, which had been approved by the Attorney-General. The House then concurring, Clause 4 (*b*) was amended to provide that the Charity Commissioners should not make an order involving a breach of trusts unless:

"on an application for authority to use existing buildings or parts of existing buildings, they are satisfied either

"(i) that the use of the buildings or part thereof for the purposes for which the trusts were created or the prohibition or restriction was imposed is impracticable, or is likely soon so to become, because the committee of management have not at their disposal, and will be unable to obtain, sufficient funds to enable the buildings or that part thereof to be, or to continue to be, so used;

"(ii) that the use of the buildings or part thereof for the purposes aforesaid is impracticable, or is likely soon so to become because of a shortage of demand for accommodation on the part of the persons for whose benefit the trusts were created or the prohibition or restriction was imposed;

("or (iii) that the committee of management have, or are likely soon to have, at their disposal premises which could be put to the use to which the application relates without breach of any trust upon which those premises are held or contravention of any such prohibition or restriction as aforesaid and that the buildings or part thereof will be used by way of exchange for those premises").

The report stage was completed. The Bill was read a third time without discussion and was sent to the House of Commons.

Road Safety

Explaining the work of the Ministry of Transport when the House of Commons discussed, on June 3rd, the Estimates for that Department, Mr. HORE-BELISHA said that the provision of pedestrian crossings had been responsible for the saving of life and limb. About 10,000 were put down in London in three months, owing to an offer, with a fixed time limit, made to the London boroughs. He was now making a similar offer to the provinces, calling their attention to the success of the London experiment. In London, where the safety measures have been chiefly concentrated, there had been a far greater reduction in accidents than in the country as a whole. There had been a reduction in London in the number of killed of 31 per cent. and of injured 16 per cent. in the last eleven weeks of this year, as compared with the same period last year. The reductions for the country as a whole in the last eleven weeks had been 16 per cent. in killed and 11½ per cent. in injured, compared with the same period last year. A distressing feature of the accident returns was the number of children involved. Of the 3,517 pedestrians killed on our roads in 1933, 1,171 were children under the age of 15—one-third of the total. In conjunction with the President of the Board of Education and the Secretary of State for Scotland he had appointed two Inter-Departmental Committees to draw up a curriculum for teaching road safety in schools. While anxious not to take any steps which would delay more extended provision, he was meanwhile closing certain streets in London to motor traffic, except when it was proceeding to premises in those streets. Notice of a regulation would therefore be given this week converting, as an experiment, certain streets in Southwark and Paddington into children's play streets. It was intended to erect notices at the ends of the streets and to paint the kerbs with green paint. The system had been tried in Salford and Manchester with success.

On June 3rd Captain HUDSON, for the Ministry of Transport, stated that in the six months beginning on November 1st, 1934, there were 1,045 accidents (of which twenty-six were fatal) involving personal injury at pedestrian crossing-places within the City of London and Metropolitan Police District. This figure, which included persons other than pedestrians, represented 4½ per cent. of all road accidents in the area during the same period.

Conditions at Quetta

On June 3rd Sir S. HOARE, replying to Mr. Attlee, made a statement with regard to the situation at Quetta after the earthquake. He said that the Western Command had assumed control of the situation and was rationing the population. Arrangements were being made to send food and collect casualties in the villages neighbouring on Quetta. Evacuation was proceeding, and would continue so long as there was no outbreak of epidemic, against which all possible precautions were being taken by the medical authorities. Patients were being treated in the Indian Military and Cantonment Hospital, where between 4,000 and 5,000 had been received up to Sunday evening. Refugee camps had also

been established on the racecourse. Supplies and personnel were being dispatched by train and aeroplane from Karachi and Lahore, and the Viceroy had lent his aeroplane for this purpose. The Viceroy had inaugurated a Quetta Earthquake Relief Fund, and had issued an appeal in India, to which he was sure there would be a prompt and sympathetic response.

High Infant Mortality in North Kensington

Mr. SHAKESPEARE, replying to Mr. James Duncan on June 3rd, said that the Minister of Health was aware of the high infant mortality rate last year in Kensington—93 per 1,000 births, compared with 59 per 1,000 for England and Wales as a whole He was satisfied that the Kensington Borough Council was taking all possible steps to reduce the infant mortality rate. The Minister of Health understood that the borough council had recently decided to add two whole-time medical officers to its staff, with a view to the further development of the valuable work of the infant welfare centres.

Mr. DUNCAN asked if there was any evidence to show that the deaths of these young children were due to any particular cause or were confined to the children of any particular class, such as the unemployed. Mr. SHAKESPEARE: No, none at all. Mr. WEST asked if the death rate in the northern part of the division was 102 per 1,000, which was the highest in London, and that the chief factors in this terrible mortality were stated to be overcrowding, underground rooms, vermin, and high rent. Mr. DUNCAN further asked if the Minister of Health was in possession of any evidence to show whether the high infant death rate in Kensington was due in any degree to lack of food, inadequacy of the services provided by the borough council, or to any other factor in regard to which the borough council could exercise control. Mr. SHAKESPEARE referred Mr. Duncan to the annual reports of the medical officer of health for the borough for information on the extent to which the infantile death rate in Kensington was considered, after special investigations, to be influenced by economic or other factors, and on the remedial measures adopted by the council for improving the conditions so far as it was within its power to do so.

West Park Mental Hospital

Mr. GROVES asked if the Minister of Health would inquire into the case of a woman who, on July 22nd, 1932, was committed to West Park Mental Hospital from St. John's Infirmary, Battersea. Mr. Groves said the only allegations made in her certificate were that she stated that the police were the cause of her losing her job; that she thought they had put out their tongues at her, which she resented, and had prevented her earning her living. He asked "in view of the frivolous nature of such grounds for certification" whether the Minister would take steps "to ensure that a proper and complete investigation is made in all such cases before anyone is deprived of their liberty." Sir HILTON YOUNG replied, on May 29th, that in this case the medical certificates contained other facts besides those mentioned by Mr. Groves, and the report of the medical superintendent of the mental hospital, made within a few days of the patient's admission, confirmed the view that she needed care and treatment. Sir Hilton offered to furnish Mr. Groves confidentially with further particulars of this patient's mental condition. Sir Hilton Young added: "I cannot accept the suggestion implied in the last part of the question that a proper and complete investigation was not made in this case by the medical practitioner and the magistrate who dealt with it in accordance with the provisions of the Lunacy and Mental Treatment Acts."

"Stassanization" of Milk.—General CLIFTON BROWN, on May 30th, asked if the attention of the Minister of Health had been drawn to a report of the Danish State dairies on the system of "stassanization" of milk as a more thorough and economic way of milk treatment than pasteurization; and whether he would have inquiry made into this treatment. Sir HILTON YOUNG said he knew of this report. Stassanization was a continuous-flow process for the heat treatment of milk. He was advised that pasteurization by the holding process efficiently operated gave a greater assurance of the complete destruction of pathogenic bacteria than continuous-flow processes

Infectious Diseases: Medical Officers' Precaution.—On June 4th Mr. GROVES asked the Minister of Health whether he would suggest to medical officers of health that they should take swabs of their own throats during the prevalence of scarlet fever or diphtheria outbreaks, and, in the event of their finding that the swabs were positive, should take the same measures in regard to themselves as they would to any member of the public in the same position. Sir HILTON YOUNG replied that he was satisfied that medical officers of health could be relied on to take such precautions as were practicable and necessary for preventing the spread of scarlet fever and diphtheria infection.

Haemolytic Streptococcus Types.—Sir HILTON YOUNG, on June 4th, informed Mr. Groves that twenty-eight different types of haemolytic streptococcus had been identified. Particular types were not assigned to particular diseases. He was advised that certain types were more frequently associated with particular clinical manifestations—for instance, scarlet fever. Mr. GROVES asked for the official explanation of the fact that four different types of the haemolytic streptococcus had been found in cases of acute tonsillitis in Essex during 1934. Sir HILTON YOUNG said he was advised that nearly all the types of the streptococcus identified could cause acute inflammation of the throat and tonsils.

Glasgow Veterinary College.—On June 4th Mr. MAXTON asked the Secretary for Scotland whether, having regard to the work done by the Glasgow Veterinary College, he would place it on the same footing as the Edinburgh College as regards Government grants. Sir GODFREY COLLINS said that State grants were formerly given to the Glasgow Veterinary College, but as there did not appear to be need of two State-aided veterinary colleges in Scotland, it was decided in 1923 to discontinue the grant to this college. The decision was supported by the majority of the Departmental Committee appointed in 1924 to consider and advise on the general organization and finance of agricultural education and research in Scotland. He saw no reason for departure from the decision.

Antimalarial Measures in Palestine.—Sir P. CUNLIFFE-LISTER, replying on June 4th to Mr. Tom Williams, who asked if there was any likelihood of re-establishing the Malarial Commission in Palestine, said that the functions of the Malaria Unit which was established under Jewish auspices in 1922 were gradually taken over by the Department of Health of the Palestine Government, and the unit as such ceased to exist in 1930. He had no reason to doubt the adequacy of the staff of the Department of Health for anti-malarial measures.

Osborne Convalescent Home.—Mr. ORMSBY-GORE, replying on June 4th to Mr. Albery, said the convalescent home at Osborne was being advertised in the columns of the daily press as receiving all officers of the Navy, Marines, Army, Royal Air Force, and Indian Army. Admission to the home was open also, under certain conditions, to retired officers, reserve officers, and ex-officers. In the last two classes the disease or injury from which the officer was suffering must be directly attributable to service.

Deaths due to Explosives in Mines.—In 1932 forty-one persons were killed and 161 injured by accidents in mines due to the use of explosives and to explosions of fire-damp attributed to shot-firing. The corresponding figures for 1933 were 19 and 142, and for 1934, 23 and 213.

Sulphurous Acid in Imported Liquid Eggs.—Sir Hilton Young recently received a document in which it was stated that one public analyst had found sulphurous acid in a sample of imported liquid eggs. Sir HILTON stated, on May 30th, that enforcement of the Preservatives Regulations was a matter for the appropriate local authorities, but he was inquiring with regard to this case.

Notes in Brief

In 1933 the total health insurance contributions from men were £17,100,000 and the number of franks 71,500,000; the figures in respect of women were £8,400,000 and 13,250,000.

In 1930 twenty-four boys under 16 years were killed and 171 seriously injured below ground at mines under the Coal Mines Act. The corresponding figures for 1931 were 25 and 142; for 1932, 17 and 112; for 1933, 15 and 101; and for 1934, 15 and 122.

Medical News

Dr. Robert Hutchison will deliver the Bolingbroke Lecture, on "Constitutional Medicine," before the South-West London Medical Society, at Bolingbroke Hospital, Bolingbroke Grove, Wandsworth Common, S.W., on Wednesday, June 12th, at 9 p.m.

The tenth annual Macalister Lecture will be delivered at the National Temperance Hospital, Hampstead Road, N.W., on Thursday, June 20th, at 9 p.m., by Mr. Herbert J. Paterson, F.R.C.S., on the subject of "Medicine and Magic." All medical practitioners and their friends are invited.

A paper on "Vocational Guidance," by Professor C. S. Myers and Dr. Angus Macrae, will be read at a meeting of the Section of Psychiatry of the Royal Society of Medicine on Tuesday, June 18th, at 8.30 p.m.

The annual meeting of the Liverpool Psychiatric Clinic was held at Rushworth Hall on May 23rd, when the chair was taken by Councillor J. J. Loughlin. The speakers were Miss Martha Jackson of Philadelphia and Dr. R. G. R. Burrows of the Maghull Epileptic Colony. Miss Jackson spoke upon the subject of occupational therapy in American hospitals and clinics, and Dr. Burrows described the work of the epileptic colony.

Mr. Ransom Pickard will deliver an address, under the auspices of the National Temperance League, on "The Vision of the Motorist," at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C., on Friday, June 14th, at 2.30 p.m. After the address Mr. Arthur Evans will open a discussion by dealing with "Neuro-muscular Control and Co-ordination," followed by Mr. N. Bishop Harman on "Visual Judgements."

The annual general meeting of the London and Counties Medical Protection Society Limited will be held at Victory House, Leicester Square, W.C., on Wednesday, June 12th, at 4 p.m.

The Fellowship of Medicine (1, Wimpole Street, W.) announces that a week-end course in infectious diseases will be held at Park Hospital, Hither Green, S.E., on June 15th and 16th. Courses especially suitable for M.R.C.P. examination candidates: Clinical and pathological course at National Temperance Hospital, on Tuesdays and Thursdays, at 8 p.m., from June 11th to 27th; chest diseases at Brompton Hospital on Mondays, Tuesdays, and Fridays, at 5 p.m., from June 11th to July 8th; cardiology at National Hospital for Diseases of the Heart, from June 24th to July 6th. Two "refresher" courses will be given at the Prince of Wales's General Hospital from June 17th to 29th and July 1st to 13th. Other forthcoming courses include proctology at St. Mark's Hospital, July 1st to 6th; urology at All Saints' Hospital, July 8th to 27th; medicine and surgery at Southend General Hospital, July 13th and 14th; and dermatology at Blackfriars Skin Hospital, July 15th to 27th. With the exception of the cardiology course, courses and clinics, etc., arranged by the Fellowship are open only to members and associates.

A post-graduate course in malariology, under the direction of Professor Bastianelli, will be held at the Istituto di Malariologia and Istituto di Sanita Publica of Rome from June 20th to August 20th. The fee is 200 lire. Further information can be obtained from the Segreteria dell' Istituto di Malariologia, Policlinico Umberto 1, Rome.

At a special meeting called by the governors of the Anti-Vivisection Hospital, Battersea Park, S.W., on May 30th, it was resolved by 42 votes to 3 that all references to anti-vivisection in the memorandum of association of the hospital should be deleted and that the name of the institution should be simply "Battersea General Hospital." Legal sanction for the changes in the articles and in the name of the institution will now be sought.

The issues of the *Wiener medizinische Wochenschrift* for May 11th and 18th commemorate the 150th anniversary of the foundation of the General Hospital of Vienna.

The issue of the *Deutsche medizinische Wochenschrift* for May 24th commemorates the twenty-fifth anniversary of the death of Robert Koch on May 27th, 1910, by a portrait of him on his death-bed.

At the anniversary meeting of the Linnean Society of London the Linnean gold medal was presented to Lieut.-Colonel Sir David Prain, F.R.S., I.M.S. (ret.), a past president of the society, in recognition of his services to botany.

On the occasion of the twenty-fifth anniversary of its foundation a series of fêtes will be held by the Thermal Federation of Auvergne, which includes the five hydro-mineral stations of Auvergne, La Bourboule, Chatel-Guyon, Mont-Dore, and Royat and Saint-Nectaire, from June 30th to July 7th. Further information can be obtained from the Comité des Fêtes, Clermont-Ferrand.

Sir John Rose Bradford, Bt., M.D., F.R.S., president of the Royal College of Physicians, 1926–31, who died on April 7th, left estate of the gross value of £22,886 (net personalty £21,349). After various bequests, he left the residue of the property upon trust for his wife for life, with remainder to May Edwards for life, and then equally between University College School, London; University College, London; University College Hospital; the Royal College of Physicians of London; and the Royal Society.

The French Rotary Club has offered a prize of 10,000 francs for the best work on the aetiology and prophylaxis of tuberculosis. The work must be submitted before December 31st, 1936.

Dr. Julius Wagner-Jauregg, professor of psychiatry and neuropathology at Vienna, has been awarded the Cameron prize for 1935 of the University of Edinburgh.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone, unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBER** of the British Medical Association and the *British Medical Journal* is EUSTON 2111 (internal exchange, five lines).

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The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Malaise after Motoring

Dr. ALISTAIR R. FRENCH writes: May I offer the following suggestions to Dr. Hawkyard for the relief of his patient's car-sickness (June 1st, p. 1155). First make sure that the cause is not exhaust fumes, either from a leaky exhaust system or from too short an exhaust pipe. Then search for a possible impulse which may be "firing off" a migrainous symptom-complex, such as acidosis, which should be relieved by "alkazane" or similar alkalizer; eye-strain produced by excessive accommodation during rapid travel or looking constantly through a misty window; or unduly sensitive semicircular canals, which are best damped by ammonium bromide and cured by a course of

"contortionist" exercises, such as standing on the head or somersaults on the parallel bars or the rings. When these details have been attended to it is wise to make sure that the attacks are not due to a "habit" neurosis, which may be cured by the suggestion of changing the car, raising or lowering the car seat, adjusting the springs, or what not.

A Sequel of Prostatectomy

"PUZZLED" writes: A patient who has had a prostatectomy performed recently upon him complains of the sexual orgasm without emission occurring in his sleep at irregular intervals. I should be glad of the experience of others as to whether this is a usual and apparently quite harmless sequel of prostatectomy.

Cracked Upper Lip

"R. B. G." writes: Dr. Druitt, in your issue of June 1st, says that for all "cracked skins" glycerin and water is useful; but is the affection in question a "cracked skin"? I find for these fissures—such as a cracked upper lip or cracks on the fingers—Carpenter's waterproof "liquid court plaster" most useful and lasts for days after application, and this might help a cracked lip, though it will nip at first. All these fissures, as in my own case, may have a toxic origin which may require attention, as well as local applications. If the patient smokes a pipe he should disinfect the mouthpiece frequently—an elementary precaution often neglected.

Income Tax

Cessation of Practice—Cash Basis

"B. T." was in a practice regarded as having ceased on March 31st. The returns have been made on a cash basis. The inspector of taxes claims that into the last account there should be brought receipts which came to hand after March 31st, and also an estimate of the debts still outstanding.

*** Unless there is something abnormal about the circumstances the request is unusual. Legally the cash basis is not correct, and an adjustment for outstanding debts *can* be claimed by the Revenue. But if the adjustments required are made "B. T." is entitled to take out of the account an amount equal to the value of the debts due to the practice as at March 31st, 1934. In other words, a full year's gross earnings must be brought in, but only one year's earnings. Normally that is equivalent to a year's cash receipts; if the "bookings" basis is to be taken by adjusting the cash receipts for debts outstanding then cash received for old debts must clearly be excluded.

Legal Expenses—Proportion of Rent—Bank Interest

"H. W.'s" inquiries will be gathered from the following replies.

*** Legal expenses incurred in connexion with the proprietorship of a practice are not allowable for income tax, as they rank as "capital" expenses. One-half is a common ratio of professional use of a combined house and surgery, except where a specially high rent is paid because the site has special professional value. Bank interest can be claimed as an expense or, if preferred, made the subject of a separate claim year by year. If the loan was *not* incurred in connexion with the acquisition of the practice, and the second method of adjustment is applied, it may be to the benefit of the taxpayer, because in the former case the earned income assessed, and consequently the relief to earned income, are both reduced.

LETTERS, NOTES, ETC.

Bee Venom Dermatitis

COATES AND COOPER, Ltd., write: In a recent issue of the *British Medical Journal* Dr. R. D. Moyle cited a case of severe dermatitis following the application of an ointment containing bee toxin. Although forapin was not mentioned we have reason to believe that this is possibly the specialty to which he may be referring. The following information may therefore be of some service both to Dr. Moyle and to other physicians who may be employing this specialty. It is an admitted fact that about 1 per cent. of mankind are peculiarly susceptible to bee toxin. With these people even the sting from one bee is sufficient to produce considerable swellings and often severe dermatitis. In the directions which accompany each tube of forapin the patient is instructed to commence with only a small quantity, and to change the site of application frequently. If these instructions are followed even those people who are peculiarly susceptible to bee toxin are usually able to tolerate forapin without discomfort. If, however, after the first application any severe dermatitis is noted the application should be discontinued.

ANTIBODY PRODUCTS Ltd. write: In view of the statement of Dr. K. R. Collis Hallowes in your issue of May 25th that formic acid "is known to be added to one bee-sting product," may we be allowed to state that our preparation, "British bee venom," contains no formic acid, nor anything other than an extract of pure bee venom (except, of course, the carbolic saline). Bee venom contains no trace of formic acid, according to the analysis of Theodore Merl (*Zeit. f. Untersuch. d. Nahrungs u. Genussmittel*, Berlin, 1921, xlii), nor is there any in our product.

Ocular Torticollis or Squint

Mr. E. TEMPLE SMITH, F.R.C.S.Ed., writes from Sydney: I should like, through you, to thank Mr. T. Keith Lyle (March 9th, p. 514) for calling attention to the substitution of the word "rectus" for "oblique" in my memorandum of March 2nd, p. 416. On referring to my carbon copy I find that I wrote "oblique" correctly. The change was made gratuitously.

*** To avoid misunderstanding we should add that the change was not made in this office, but in Sydney.

John Gay the Elder

Sir ROBERT ARMSTRONG-JONES writes: May I be allowed to supplement the interesting reminiscences of my friend Sir D'Arcy Power about the late Dr. John Gay's father, in the *British Medical Journal* of May 25th. Mr. John Gay and Dr. Little (of the London Hospital) were consulting surgeon and physician respectively to the Earlswood Asylum in 1880–2, when I was the assistant medical officer, under the superintendence of Dr. G. W. Grabham (brother of Dr. Michael Grabham of Madeira). They both came down together once a quarter, and spent the whole day in friendly association with the patients and staff, and enjoying the pleasant inconsequences of the visit. On one occasion Mr. John Gay brought down Du Maurier, with the possible view of contributing something to the hilarity of *Punch*, but the visit had the opposite effect on the non-medical mind. Meeting Sir Gerald Du Maurier many years later, he stated to me that his father entertained a great friendship for John Gay, and he remembered hearing of the visit to Earlswood (now the Royal Earlswood Institution), and how painfully it had affected his father, more accustomed to the humorous than the pathological side of humanity.

Medical Golf

Dr. A. Cochrane of Bolton became the new holder of the Manchester and District Medical Golfers' Association's challenge cup at the annual competition on May 29th, when over 130 competitors took part in an eighteen ho'es stroke test at Wilmslow. The captain's prize was won by Dr. A. Owen of Whitefield with 90 – 18 = 72, and the Walter gold me lal for the best gross score by Dr. R. W. Fairbrother of Wilmslow, who went round in 72. Dr. J. Lowe of Oldham, with 84, won the Walter silver medal for the best gross score for players with handicaps from 10 upwards, and the gross prize for the first nine holes was won by Mr. Garnett Wright of Manchester with 35, and that for the second nine by Dr. T. L. Stockdale of Newton Heath with 34.

Post-mortem Technique

We are informed by the London County Council that the pamphlet on *The Technique of a Post-Mortem Examination*, prepared by Dr. W. G. Barnard and referred to in our issue of May 4th (p. 933), is being published, and copies (price 2d.) will be available shortly. They may be bought, either directly or through any bookseller, from Messrs. P. S. King and Son, Ltd., 14, Great Smith Street, S.W.1.

Messrs. Boots have issued a booklet for the information of the medical profession describing the full range of their products for treatment of the anaemias. Copies of this booklet are now available, and more comprehensive literature on any of the preparations mentioned therein may be had from Boots Pure Drug Co., Ltd., Wholesale and Export Department, Station Street, Nottingham.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 46, 47, 48, 49, 50, 51, and 55 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 53.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 256.